HOSPITAL LIBRARY JUL 18 1949

Journal OF THE AMERICAN DIETETIC ASSOCIATION

VOL. 25, NO. 7 JULY 1949

TEACHING NUTRITION TO MEDICAL STUDENTS
Fredrick J. Stare, M.D.

THE DIETITIAN'S ROLE IN THE EDUCATION OF MEDICAL STUDENTS
Martha Nelson Lewis

DIETARY MANAGEMENT IN A STUDY OF RIBOFLAVIN REQUIREMENTS
M. K. Horwitt et al.

NEW YORK STATE NUTRITION SURVEY. I. A Nutrition Survey of Public School Children
Martha Trulson, D. Mark Hegsted, and Fredrick J. Stare

TRAINING OF SUPERVISORS—A Prerequisite for Good Food Service
Clara E. Childress

SIGNIFICANCE OF FEEDING FROM THE VIEWPOINT OF CHILD DEVELOPMENT
James L. Hymes Jr., Ed.D.

M. Faith McAuley Memorial Fund

Report of the Nominating Committee, American Dietetic Association, 1948–49

The Child and His Food

Group Feeding for Hospitalized Children

The Nurse's Approach to the Feeding of Children

32nd A.D.A. Annual Meeting, Denver, October 10–14, 1949

Published by THE AMERICAN DIETETIC ASSOCIATION

PUBLISHING OFFICE: MOUNT ROYAL AND GUILFORD AVENUES, BALTIMORE 2, MARYLAND
EXECUTIVE OFFICES: 620 N. MICHIGAN AVE., CHICAGO 11, ILLINOIS

THERE IS ONLY ONE

heavy-duty

SHORTENING

A hydrogenated shortening made of pure vegetable oil for high quality in *Pie Crust, Sweet Doughs, Cake,* and *Doughnuts.* Especially recommended for *Creamed Icings* and for *Frying.*

A PRODUCT OF

Shortening SHORTENING SHQ HEADQUARTERS Headquarters

WESSON OIL & SNOWDRIFT SALES CO.

NEW YORK • CHICAGO • SAVANNAH • NEW ORLEANS
SAN FRANCISCO • MEMPHIS • HOUSTON

VOLUME 25
NUMBER 7

Journal OF THE American Dietetic Association

Publishing Office
Mt. Royal and Guilford Aves.
Baltimore 2, Md.

American Dietetic Association
620 N. Michigan Ave., Chicago 11, Ill.

CONTENTS, JULY 1949

TEACHING NUTRITION TO MEDICAL STUDENTS—*Fredrick J. Stare*, M.D. 585

THE DIETITIAN'S ROLE IN THE EDUCATION OF MEDICAL STUDENTS—*Martha Nelson Lewis* 588

DIETARY MANAGEMENT IN A STUDY OF RIBOFLAVIN REQUIREMENTS—*M. K. Horwitt, Gordon Sampson, O. W. Hills, and D. L. Steinberg* 591

NEW YORK STATE NUTRITION SURVEY. I. A Nutrition Survey of Public School Children—*Martha Trulson, D. Mark Hegsted, and Fredrick J. Stare* 595

TRAINING OF SUPERVISORS—A Prerequisite for Good Food Service—*Clara E. Childress* 606

SIGNIFICANCE OF FEEDING FROM THE VIEWPOINT OF CHILD DEVELOPMENT—*James L. Hymes, Jr.* Ed.D. 611

EDITORIAL

M. Faith McAuley Memorial Fund—*Ella Marie Eck* 613

Report of the Nominating Committee, American Dietetic Association, 1948–49 614

CURRENT COMMENT

The Child and His Food—*Lorraine Weng* 616

Group Feeding for Hospitalized Children—*Lorraine Weng* 620

The Nurse's Approach to the Feeding of Children—*Isabelle M. Jordan*, R.N. 626

BOOK REVIEWS 634

CURRENT LITERATURE 636

NEWS NOTES 642

The Journal of the American Dietetic Association is published monthly by the American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., and 620 N. Michigan Ave., Chicago 11, Ill. Neither the Association nor the Editor assumes responsibility for the opinions expressed by authors of papers abstracted, quoted, or published in full in this Journal

Subscriptions: Rate $5 per year. Special rate to undergraduate students and dietetic interns, $1.50 per year, if order is approved by head of the department. Single copies, 75 cents. All correspondence concerning Journal subscriptions, orders for copies, or reprints from the Journal, and notices of change of address should be sent to the American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., or 620 N. Michigan Ave., Chicago 11, Ill. Notices regarding change of address should reach the publisher two weeks before the date of issue on which the change is to take effect and both old and new addresses should be given.

Editorial Correspondence: All articles and notices for publication, general correspondence, and inquiries should be sent to the Editor at the American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill. Manuscripts are accepted for publication on condition that they are contributed solely to the Journal. Copy must be double-spaced and original, not carbon, submitted.

Advertising: All correspondence concerning advertising should be addressed to the American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill.

COPYRIGHT, 1949, BY THE AMERICAN DIETETIC ASSOCIATION Printed in U.S.A.
Entered as second-class matter June 30, 1925 at the Post Office at Baltimore, Md., under the act of August 24, 1912
Published Monthly by The American Dietetic Association

OFFICERS, 1948–1949 AMERICAN DIETETIC ASSOCIATION

Headquarters of the Association, 620 N. Michigan Ave., Chicago 11

Honorary President

LULU G. GRAVES, 2605 Haste Street, Berkeley, California

EXECUTIVE BOARD

President, HELEN E. WALSH, California State Dept. of Public Health, San Francisco

President-Elect, ELIZABETH PERRY, City Hospital, Cleveland, Ohio

Vice-President, GRACE BULMAN, Central Office, Veterans Administration, Washington, D. C.

Secretary and Chairman, Membership Committee, MARGARET A. OHLSON, Michigan State College, East Lansing

Treasurer and Chairman, Finance Committee, FERN W. GLEISER, School of Business, University of Chicago

Community Nutrition Section Chairman, ADELIA M. BEEUWKES, School of Public Health, University of Michigan, Ann Arbor

Diet Therapy Section Chairman, MARGUERITE L. PETTEE, Medical College of Virginia, Richmond

Food Administration Section Chairman, MARION D. FLOYD, Massachusetts General Hospital, Boston

Professional Education Section Chairman, ERCEL S. EPPRIGHT Iowa State College, Ames

HOUSE OF DELEGATES

Chairman, HELEN E. WALSH

Secretary, MARGARET A. OHLSON

STAFF

Headquarters Office

GLADYS E. HALL, Executive Secretary
MABLE MACLACHLAN, Educational Director
MILDRED L. EGEBERG, Office and Advertising Manager
RUTH JUBB MCDONNELL, Assistant to Executive Secretary
MARY ELLEN JOHNSON, Assistant to Educational Director
RUTH E. BENSON, Exhibit Manager
DOROTHEA F. TURNER, Editor, Journal
HARRIET E. SANKEY, Managing Editor, Journal
MARGENE WAGSTAFF, Publications Assistant

ADVISORY COMMITTEE

ALEXANDER MARBLE, M.D., 81 Bay State Road, Boston.... 1949

WENDELL F. GRIFFITH, Ph.D., University of Texas, Dept. of Biochemistry, Galveston..... 1950

JAMES W. SHERRILL, M.D., The Scripps Metabolic Clinic, La Jolla, California 1951

JOURNAL BOARD

E. NEIGE TODHUNTER, University of Alabama, University... 1949
KATHERINE E. LOUSER, Norristown State Hospital, Norristown, Pennsylvania..... 1950
CLARICE GULLICKSON, Veterans Administration, Washington, D. C..... 1951
CORINNE ROBINSON, 90 East Stewart Avenue, Lansdowne, Pa..... 1952
ICIE MACY HOOBLER, Children's Fund of Michigan, Detroit.. 1953
MARGUERITE J. QUENEAU, Department of Health, State of New York, Albany..... 1954

PLACEMENT BUREAU BOARD

E. LYNETTE GATTEN, Blackhawk Hotels Company, Davenport, Iowa..... 1949
E. EVELYN SMITH, University of Illinois, Urbana..... 1950
BERTLYN BOSLEY, Women's College, University of North Carolina, Greensboro..... 1951
ELIZABETH COLE, Mountainside Hospital, Montclair, New Jersey..... 1952
EDNA GILBERT, Board of Education, Youngstown, Ohio..... 1953
ELIZABETH HAYWARD, Los Encinas Sanitarium, Pasadena, Cal..... 1954

INVESTIGATION BOARD

ELSPETH BENNETT, Ralston Purina Company, St. Louis..... 1949
FLORANCE B. KING, University of Vermont, Burlington..... 1950
ETHEL A MARTIN, National Dairy Council, Chicago..... 1951

COMMITTEE CHAIRMEN

A. D. A. Loan Fund for Graduate Study, HELEN S. MITCHELL, University of Massachusetts, Amherst

Constitution, ANNA E. BOLLER, National Live Stock and Meat Board, Chicago

By-Laws, HELEN S. MITCHELL, University of Massachusetts, Amherst

Convention, DORIS ODLE and MARGARET C. BERNARD

Educational Exhibits, MARY REEVES, U. S. Children's Bureau, Chicago

Finance, the Treasurer, WINIFRED ERICKSON, and LUTE TROUTT

Historian, ANNA E. BOLLER, National Live Stock and Meat Board, Chicago

History of Nutrition and Dietetics, E. NEIGE TODHUNTER, University of Alabama, University

Legislation Information MARGERY VAUGHN, 1321 S. Arlington Ridge Road Arlington Virginia

Nominating, HELEN A. HUNSCHER, Western Reserve University, Cleveland, Ohio

Program, GLADYS E. HALL

Public Relations, KATHARINE BROWN and MARY I. BARBER

Publications, UNA VERMILLION, Utah State Agricultural College, Logan

Vocational Guidance, MARJORIE HALL SILER and EVA YLVISAKER

STATE DIETETIC ASSOCIATIONS AFFILIATED WITH THE AMERICAN DIETETIC ASSOCIATION

ALABAMA: *President*, Elna Daniels, Box 1874, University, Alabama

ARIZONA: *President*, Mrs. Mary Feth, 3202 E. 27th Street, Tucson, Arizona

ARKANSAS: *President*, Thelma Meharg, State Department of Education, Room 120, State Capitol, Little Rock, Arkansas

CALIFORNIA: *President*, Clancy I. Morrison, Occidental College, Los Angeles, California

COLORADO: *President*, Mrs. Margaret C. Bernard, 130 Washington St., Denver, Colorado

CONNECTICUT: *President*, Dr. Martha Potgieter, University of Connecticut, Storrs, Connecticut

DELAWARE: *President*, Miss Cynthia Bishop, Delaware Hospital, Wilmington 12, Delaware

DISTRICT OF COLUMBIA: *President*, Mrs. Anne Stewart Miller, 3330 N. Albemarle, Arlington, Virginia

FLORIDA: *President*, Mrs. Thelma G. Flanagan, 1045 Crestview, Tallahassee, Florida

GEORGIA: *President*, Louise Mulherin, Veterans Hospital, Augusta, Georgia

IDAHO: *President*, Miss Eula Tombaugh, Samaritan Hospital, Nampa, Idaho

ILLINOIS: *President*, Mary McKittrick, Mercy Hospital, Chicago, Illinois

INDIANA: *President*, Louise Irwin, Indiana University Medical Center, Indianapolis 7, Indiana

IOWA: *President*, Beatrice Donaldson, Iowa State College, Home Economics Department, Ames, Iowa

KANSAS: *President*, Sister Regina Marie Dickman, Marymount College, Salina, Kansas

KENTUCKY: *President*, Miss Mary H. Gillaspie, Florence, Kentucky

LOUISIANA: *President*, Irene Tolliver, Louisiana Polytechnic Institute, Ruston, Louisiana

MAINE: *President*, Isabel Patterson, Department of Health and Welfare, Augusta, Maine

MARYLAND: *President*, Mary Reinhardt, 539 E. 38th Street, Baltimore 18, Maryland

MASSACHUSETTS: *President*, Mrs. Elizabeth K. Caso, Harvard School of Public Health, 695 Huntington Avenue, Boston, Massachusetts

MICHIGAN: *President*, Miss E. Grace Clark, Pontiac State Hospital, Pontiac, Michigan

MINNESOTA: *President*, Hortense L. Allen, Mayo Clinic, Rochester, Minnesota

MISSISSIPPI: *President*, Mrs. Mary S. Harvey, Ruleville, Mississippi

MISSOURI: *President*, Esther Ratliff, 205 Brush Creek, Apt. 104, Kansas City, Missouri

MONTANA: *President*, Marion Kelly, Murray Hospital, Butte, Montana

NEBRASKA: *President*, Lucille Backemeyer, University of Nebraska, Lincoln, Nebraska

NEW HAMPSHIRE: *President*, Miss Vivian Rockwood, Keene Teachers College, Keene, New Hampshire

NEW JERSEY: *President*, Miss Pela Braucher, 38 Remsen Avenue, New Brunswick, New Jersey

NEW MEXICO: *President*, Doris Barker, University of New Mexico, Albuquerque, New Mexico

NEW YORK: *President*, Meredith Jones, 130 York Avenue, New York, N. Y.

NORTH CAROLINA: *President*, Mrs. Elizabeth Miller, Senior High School Cafeteria, Westover Terrace, Greensboro, North Carolina

NORTH DAKOTA: *President*, Frances M. Lindsay, 1410 Eighth Street, South, Fargo, North Dakota

OHIO: *President*, Helen Mallory, University Hospitals, Cleveland 6, Ohio

OKLAHOMA: *President*, Miss Vera Parman, University Hospitals, Oklahoma City, Oklahoma

OREGON: *President*, Mary Elizabeth Jones, 430 N. Killingsworth Street, Portland 11, Oregon

PENNSYLVANIA: *President*, Mrs. Anna dePlanter Bowes, Department of Health, Harrisburg, Pennsylvania

RHODE ISLAND: *President*, Mrs. Rena S. Accinno, Visiting Nurse Association, Pawtucket, Rhode Island

SOUTH CAROLINA: *President*, Mrs. Marguerite McInteer, 42 Carolina Avenue, Sumter, South Carolina

TENNESSEE: *President*, Dr. Florence MacLeod, University of Tennessee, Knoxville, Tennessee

TEXAS: *President*, Frances Welch, 1810 Chestnut, Denton, Texas

UTAH: *President*, Una Vermillion, Utah State Agricultural College, Logan, Utah

VERMONT: *President*, F. Aline Gravel, Mary Fletcher Hospital, Burlington, Vermont

VIRGINIA: *President*, Ellasue W. Carr, Lewis-Gale Hospital, Roanoke, Virginia

WASHINGTON: *President*, Clara Belle Tavis, P. O. Box 3145, Seattle 14, Washington

WEST VIRGINIA: *President*, Ona F. Stinson, McMillan Hospital, Charleston, West Virginia

WISCONSIN: *President*, Mrs. May S. Reynolds, University of Wisconsin, Madison 6, Wisconsin

HAWAII: *President*, Mrs. Helen G. McGill, Box 1601, Vocational Division, Honolulu Department of Public Instruction, Honolulu, Hawaii

Teaching Nutrition to Medical Students[1]

FREDRICK J. STARE, M.D.

Department of Nutrition, Harvard School of Public Health and Department of Biochemistry, Harvard Medical School, Boston

NUTRITION should be an essential component of the standard medical curriculum. Of all the environmental factors affecting health in present-day civilization in this country, none is more important than nutrition. Yet in most medical schools, organized instruction in nutrition is sadly neglected, despite "lip service" to the contrary.

The first half of this century has witnessed a great improvement in public health, due largely to the control of infectious disease. Tuberculosis, pneumonia, and dysentery, which were the leading causes of death in 1900, are no longer major health problems. We know how to control these diseases; all that remains is a "mopping up" procedure. The health problems which confront us in the last half of the twentieth century are the degenerative diseases, particularly cardiovascular-renal disease and cancer. Advances in this area will be aided by increased knowledge of nutrition.

A less clearly defined problem, but nevertheless an important one, is the overall improvement of well-being as evidenced by healthier children and a more productive life for adults. This problem includes the preventive aspects of illness, both physical and mental, and better nutrition will play an important part in its solution. Too many of the current leaders in medicine and public health still think that three meals a day which satisfy the appetite will provide adequate nutrition. Nothing could be farther from the truth.

Nutrition, or the science of food and its relation to health, is a comparatively new field. The investigator in the laboratory with his knowledge of how to better nutrition and the physician and health worker with his knowledge of human needs have been far apart. If the information obtained by the investigator is to be applied, this distance must be bridged. The investigator is responsible for getting information, the general physician and health worker for interpreting it. The distance between them can be bridged by bringing the results of investigation to the physician and health worker by means of a thorough professional training.

Few physicians, health officers, dentists, medical or health administrators, nurses, or social workers have received much training in nutrition.

NECESSARY BASIC TRAINING

There is one general condition that applies in varying degree to all categories of professional workers, namely, an adequate basic training. Nutrition, as a science, is a development largely of biochemistry which in turn is an outgrowth of chemistry and physiology. Therefore, all the professional workers in the field of nutrition should have some acquaintance with general chemistry, physiology, and biochemistry, the amount depending on what the professional worker is to do. Obviously, the investigator in the nutrition laboratory needs far more preparation in basic science than does the nurse or social worker, but a good principle is that no one will make a serious mistake by emphasizing training in the basic sciences.

The facts of human nutrition have come mainly from two sources, the laboratory experiment and observations of the food practices and nutritional condition of individuals and of peoples. Since nutrition is an experimental science, it is important that professional workers should have an appreciation of the experimental method acquired through experience in the laboratory. On the other hand, there are other aspects of nutrition which are treated by the social sciences and the worker who does not understand this interrelation will remain permanently handicapped in his effort to adjust food practices to nutritional needs.

In medicine, as in public health, nursing, health education, and social work, the applications of nutrition are so broad that training can be had best along two main lines: first, incorporating nutrition in many of the courses standard in present curricula; and second, special courses for those students who are particularly interested in nutrition or some aspect of

[1] This paper includes material from a report (September, 1946) of a committee appointed by the Dean of the Harvard Medical School to make recommendations on the teaching of nutrition to medical students and from a report (May, 1948) of a committee of the Nutrition Section of the National Health Assembly appointed for the same purpose. The author was chairman of these two committees. Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 20, 1948.

nutrition as a specialty. Integration of nutrition teaching in a professional school can be accomplished only if a special committee is made responsible for planning and implementing this teaching program.

The following is a suggested curriculum for the teaching of nutrition throughout the four years of medicine. This is given in some detail to illustrate specifically how nutrition can easily be integrated into a number of standard courses in *each* of the years of professional training.

FIRST AND SECOND YEARS

I. *Anatomy.* The effects of exogenous and environmental stimuli on cell structure, growth, and function should be discussed.

II. *Biochemistry.*
   A. General lectures in biochemistry dealing with protein, fat, carbohydrate, minerals, and water balance
   B. Specific lectures dealing with nutrition as follows:
      1. Historical—present concept of nutrition
      2. Vitamins A and D
      3. Thiamine, riboflavin, and niacin
      4. Folic acid, choline, and ascorbic acid
      5. Other vitamins and growth factors
      6. Trace minerals in nutrition
      7. Nutrition in medicine
   C. Laboratory work in experimental nutrition

III. *Physiology.* The physiology of digestion and metabolism should be thoroughly covered with special attention to nutritional factors.

IV. *Bacteriology.* Lectures covering the material suggested by the following titles:
   A. Bacterial nutrition
   B. Bacterial nutrition and its relation to chemotherapy and to the study of nutritional problems in man

V. *Pathology.* The pathology of nutritional deficiencies should be thoroughly covered.

VI. *Physical Diagnosis, or Second-Year Medicine.* Periods covering material included in the following titles:
   A. Symptoms and signs that may be associated with inadequate nutrition
   B. The classical nutritional deficiencies

VII. *Laboratory Diagnosis.* Laboratory methods in the diagnosis of nutritional deficiencies should be discussed.

VIII. *Second-Year Pediatrics.* Courses dealing with growth, development, and maturation should include the following:
   A. Nutrition and the physiology of the newborn
   B. Nutrition and the progress of growth
   C. Nutrition and the significance of retarded growth
   D. Nutritional requirements of infants and children and how these requirements are met by food

THIRD AND FOURTH YEARS

I. *Third-Year Lectures in Medicine or Surgery.*
   A. Evaluation of nutritional status
   B. Nutritional problems in general medicine
   C. Conditioned nutritional deficiencies
   D. Obesity and malnutrition
   E. Calcium and phosphorus metabolism
   F. Nutrition in convalescence
   G. The use and abuse of commercial vitamin, mineral, and protein preparations
   H. Supplementary feedings—oral, tube, and parenteral

II. *Third-Year Lectures in Pediatrics.* Courses dealing with principles of infant and child feeding should include consideration of:
   A. Acute and chronic deficiencies, e.g. rickets, scurvy, tetany, anemias, and so on
   B. Interrelationships between nutritional deficiencies and infectious diseases in failure of growth and development

III. *Third-Year Lectures in Obstetrics.* Lectures covering the material suggested by the following titles should be given:
   A. Nutritional requirements in pregnancy and lactation and the importance of breast feeding
   B. Nutrition and its relation to complications of pregnancy and the health of the newborn

IV. *Third-Year Lectures in Preventive Medicine.* Lectures covering the material suggested by the following titles:
   A. Nutrition and improved health
   B. Nutritional studies of population groups
   C. Nutrition and world economics

V. *Applied Nutrition (Dietetics).* As part of the out-patient or ward service in medicine, surgery, obstetrics, and pediatrics, sufficient time should be made available for each student to become thoroughly familiar with the principles of applied nutrition. Each student should be able to write dietary prescriptions which will provide for adequate nutrition and to interpret them in terms of food. This can be taught best by a competent therapeutic dietitian working with groups of six to eight students and would require a minimum of three 2-hr. periods. It makes no difference whether this is taught on the medical or surgical service. Applied nutrition in obstetrics and pediatrics should each be considered separately and would each require two 2-hr. periods provided the students have already had the basic instruction in applied nutrition recommended for medicine and surgery; if this

has not been the case, a third 2-hr. period would be needed.

VI. "*Nutrition Rounds.*" Once a week a member of the clinical staff in medicine, surgery, pediatrics, and obstetrics may see with the students on the service, patients who present unusual or common nutritional problems. The therapeutic dietitian should accompany the group on rounds and participate in the discussions. The weekly clinical-pathologic conference and the weekly grand rounds held by most hospitals are valuable teaching aids. Discussions on various aspects of nutrition should be organized on appropriate occasions.

VII. *Socio-Economic Factors in Nutrition.* In any discussion of applied nutrition, the medical student, as well as other professional health personnel, must consider the socio-economic factors of obtaining the food necessary for any recommended diet. How does the patient get the money (or the food) for diets that are prescribed? What agencies in the community provide economic assistance? The participation of the medical social worker in case conferences will help both students and doctors to recognize and solve these important problems.

SUMMARY

Nutrition is such a broad and important subject in health that all physicians should have some awareness of the subject. Professional training in nutrition for the physician is important and should include some or all of the following:

(a) Basic and historical information on the science of nutrition, in perspective to the other sciences.

(b) Applications of nutrition to medical and health problems.

(c) An account of recent research in nutrition as it applies to medicine and public health with some evaluation of present and future problems.

(d) The economic, social, and psychologic aspects of nutrition.

Professional training in nutrition should be given by each of the following general procedures:

(a) Instruction in nutrition should be included in each of the years of medical education.

(b) Most of this instruction should be incorporated in standard courses of the curriculum.

(c) Special courses in various phases of nutrition should be available for those students desiring to know more about nutrition.

May I repeat the first three sentences of this paper —"Nutrition should be an essential component of the standard medical curriculum. Of all the environmental factors affecting health in present-day civilization in this country, none is more important than nutrition. Yet in most medical schools, organized instruction in nutrition is sadly neglected—despite 'lip service' to the contrary."

Maturity—A Changing Concept

Maturity is a changing concept. It does not mean what it meant a hundred years ago; nor does it mean what it did even twenty-five years ago. Maturity is a developmental process in mentality. Few people, in fact, have reached true maturity. . . . A considerable degree of immaturity prevails in large numbers of the population everywhere. The inability of people to live with other people, their inability to adjust to changing circumstances affecting them and those close to them, their inability to understand others' points of view is most marked.

Some grown-up people, although they may have developed physically, have not yet completed their social development. . . . In the relation of persons there is indeed a long way to go in development. A child discovers his mother and then others in his family. He sometimes goes as far as discovering the people in his province and occasionally discovers and develops a real relationship with the people in his own nation. But it is still rare, it is very rare, to find a person truly loyal to all kinds of people in his own nation, no matter what their race, creed, or politics. Only through such a general development, through such maturity, is it possible for the world to develop enough world citizens in enough places. . . .

At all times there is movement and development. . . . At twelve or so the child should be functioning several months ahead of himself, at sixteen he should be eight or ten years ahead of his present self and should be planning his future. When a man has reached maturity, he should be able to function, in terms of time at least, two or three generations ahead. The most important work being done in the world today will not reach its greatest fruition in this generation or even in the next, but in the generation after that. . . .

The world has a great need for these people, these mature people, people who see time in these terms; and it is under these conditions that the world of the United Nations and other international organizations must continue.—*Dr. Brock Chisholm, Director General, World Health Organization, in an address before the WHO Regional Committee for the Eastern Mediterranean at its first meeting in Cairo, Egypt, February, 1949.*

The Dietitian's Role in the Education of Medical Students[1]

MARTHA NELSON LEWIS

Director, Dietary Department, Ohio State University Hospital, Columbus

DURING the past two or three years our thinking on the subject of the nutrition education of the medical student has undergone a gradual change. The original question was: do we need to include an organized course in nutrition? Today the question has changed to the vital point of: what should be included in such a course and how can the teaching be made effective?

Since nutrition is not a subject complete within itself, but an integral part of many subjects which deal with the living organism, the nutrition education of the medical student is not administered by any one person. Several authorities have pointed out that the courses in biochemistry, physiology, medicine, pediatrics—in fact, practically all courses in the medical curriculum—have some phase of nutrition within their scope. Only recently, though, have teachers taken advantage of their opportunity to teach nutrition in these courses. A few days ago, I talked with a group of doctors who had graduated from several different medical schools within the last six to ten years. None had heard much about nutrition in medical school, and all were asking for some book, some course, or some short way to bridge the gap.

THE DIETITIAN'S OPPORTUNITY

When the teaching of nutrition is incorporated in all of these regular classes, the student becomes aware of the part it plays in the growth, development, and functioning of the cells; he can recognize nutritional deficiency diseases; he knows when he needs to prescribe a high-protein diet and when a reducing diet is indicated; and he can identify and describe the functions of protein, vitamins, and other nutrients. He is in possession of many *facts*, but nowhere has he had the opportunity to acquire the viewpoint and the tools and techniques which would enable him to instruct patients in terms of the foods he expects them to eat. He can write diet orders in terms of grams of protein, but few medical students have had sufficient experience with foods to know which foods furnish specific nutrients, nor do they know how to substitute one for another to maintain adequacy on a restricted or modified diet. The establishment of this viewpoint in the medical student, and the development in him of the ability to recognize and meet the food needs of the individual patient is a definite challenge to the dietitian.

The nutrition education of the medical student is, therefore, a cooperative project, and it is up to the dietitian to find an opportunity to make her contribution to the team. She might serve as a consultant to the students in biochemistry when they are calculating the food value of their own diets. She might work with the pediatrician when the class is studying infant and child feeding. She might go on medical and surgical rounds and contribute to the total information presented there. She can assist the student in the out-patient clinic in obtaining from the patient pertinent facts. For instance, after examining a patient in the prenatal clinic, the doctor had written, "no complaint except occasional heartburn." The dietitian discovered that the patient was eating very little because she believed food caused the heartburn and she was consuming a 1-lb. box of soda a week to combat it. From her background, the dietitian can help the student become more conscious of the part played by nutrition in the total care of his patient.

Another important thing the dietitian can do is to help the medical student understand the role of the dietitian in the hospital. When doctors and dietitians work together, there is mutual benefit to the patient, to the doctor, and to the dietitian.

This information about food, which the dietitian can provide for the student, should be of value to him in formulating good diet orders as an intern and later as a member of a hospital staff. In addition to this, it should enable him to instruct his patients in the hospital and in his private practice as well. The majority of medical students open offices of their own where the services of a dietitian are not available.

[1] Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 20, 1948.

Their patients will depend on them for their nutrition information.

TECHNIQUES IN TEACHING MEDICAL STUDENTS

Many of the fundamentals necessary to meet these goals cannot adequately be presented outside of a planned course in nutrition. Personal experience with foods and the translating of scientific diets into terms of food can scarcely be provided in other courses.

It is not feasible to draw up a series of topics and present it to you as a course in nutrition for medical students. An outline which would be applicable and practical in one situation would not apply in another.

After our course in applied nutrition at Ohio State University had been described in 1947 at the annual meeting of the American Dietetic Association (1) a number of requests for an outline of the course were received. I tried to answer these requests as best I could, but felt that the outline failed to describe what we really do. The content of the course and the methods of presentation are flexible and vary somewhat from time to time. We are influenced by requests from our students and by everyday experiences. Clinical examples of good or poor practices —a patient with diet fads, for instance—are used as they present themselves. Our objective, also, consists of the development of a "spirit" or "viewpoint" as much as it does of the presentation of facts. This idea is difficult to convey in an outline of subject matter.

When the dietitian has an opportunity to teach the medical student, she does not tell him what diet to order in a given pathologic condition. The diet order is developed by analyzing the situation; together, they discuss the needs of the individual. Are they the same or different from the normal? What, if anything, will interfere with the usual procedure of digestion, absorption, and utilization? After presenting all the available information and writing a usable and practical diet order, they can plan the patient's food intake so that the constituents are adequate for maintenance of the desired level of nutrition and the form and consistency of the food are satisfactory for proper utilization. Clinical correlations are essential for the most intelligent and effective interpretation.

LEARNING THROUGH PERSONAL EXPERIENCE

Throughout the medical school training there is the concept of having the student realize what the patient goes through. In biochemistry the students swallow a stomach tube, not so much to provide material for gastric analysis but so that the student may appreciate the reactions of the patient who must swallow this tube.

In our plan we have included the serving of the various diets to the students so that they may gain experience with the food constituents. We believe this to be effective teaching and worth the additional effort entailed. If the student eats the diets which frequently are prescribed, he can better answer the patients' queries about the food; he knows from experience just why some patients complain; he sees for himself how adequate or inadequate certain diets may be. Seeing a tray served to a patient does not have nearly as great a teaching value as actually eating the diet.

All dietitians have had the experience of receiving a diet order for a so-called "special diet" which defined some one or two specific nutrients in a manner which made it impossible to serve an adequate diet and comply with the diet order. The students cannot realize the implications of the restricted diet order until they have some experience along this line. By planning and eating low-carbohydrate diets, low-sodium diets, low-residue diets, and others, they become conscious of the inadequacy or unpalatability which may accompany such restrictions, as well as learn the food constituents of these diets.

We also have found that the discussions taking place during the meal bring out many useful facts that might not be included in a planned presentation. The students ask and answer their own questions. One day someone brought up a discussion by asking, "Why do we not see more results of inadequate diets since some of these prescribed diets are obviously inadequate?" One student responded that many deficiencies are subclinical and difficult to define; therefore, the doctor might not be aware of them. Another student stated that he thought the chief influencing factor was that patients frequently do not follow the diet that accurately, especially when the diet is very restricted.

Many doctors tell patients to "watch their diets" and give lists of "prohibited" foods. The patient's attention is focused on some one or two constituents, as for instance, "don't eat starch or sugars," and there is no concern for the other constituents and the total intake. Medical students need to work with foods before they can realize the inadequacy of this type of instruction. They need to have supervised practice in giving positive instruction in terms of actual foods. Simply telling the students is not nearly as effective as presenting clinical evidence which is always available. One example we have used was a woman who came to an out-patient clinic visibly ill and thin. She was sent to the gall bladder clinic where they told her to eat no fats, meats, cream, or butter. The next week she was sent to urological clinic where they told her to eat no fruits and vegetables except potatoes. Some two weeks later she returned to medical clinic, thinner and sicker than before. The doctor sent her to the dietitian who discovered that the patient had been living on fat-free broth and potatoes, because nearly everything else had been prohibited. We should try to develop in our students a realization of the total nutritional

problem of the patient and to give the student sufficient experience with food so that he can tell the patient what to eat, instead of what not to eat.

Some may feel that the content of such a course could more properly be called "dietetics" than "nutrition." It is true that one of our chief aims is the interpretation of diet orders in terms of foods and acquainting the student with different types of food. The dietitian is teaching from the standpoint of foods, but, at the same time, she can stimulate greater appreciation of the importance of good nutrition. In other words, she is using dietetics as a tool to teach nutrition. She can, by clinical example, demonstrate that positive nutritional information is essential for practically every patient. The dietitian can stimulate an appreciation and an understanding of the individual's nutritional problems.

STUDENTS ANALYZE BENEFITS OF COURSE

We have had the organized course in nutrition for medical students at Ohio State University for a little over two years. From the viewpoint of a dietitian, I believe the course valuable because it provides a type of instruction which cannot adequately be presented elsewhere. To get the doctors' evaluation of the course, however, I prepared a questionnaire and gave or sent it to those students who are now interning either in our hospital or in surrounding states.

Our course consists of twelve, 2-hr. periods. I asked if they thought it could be condensed into less. The answer was unanimous, "No." Several suggested additional classes would be of value, but none thought fewer meetings adequate.

In answer to the question, "Is any of the material a repetition of other courses," a few said they could remember no repetition. Others said, "Yes there was, but that it was valuable repetition." One student stated, "The repetition was of value in unifying our knowledge of dietetics." Another wrote, "Much material had already been included in physiology, chemistry, and other courses—however, in a somewhat more didactic form. The nutrition course served as a 'melting pot' to fuse these facts into a vital and realistic whole."

They were asked if they now feel that the serving of representative meals was of value. The answers to this were most enthusiastic. One stated, "The meals gave me the ideas I remember most clearly." All seemed to feel that their understanding of the patient's problems was enhanced.

Another question was, "Can you specify any incident where you have used or have benefited by the material you had in this course?" Several answered that they "found much less need for the more restricted special diets." . . . . "Surgical patients were back to a regular diet more rapidly, resulting in a prompt reversal of the negative nitrogen balance." . . . . Several others stated that "no other course provided such practical help in writing intelligent, usable diet prescriptions."

From the space provided for "comment," I quote the following:

"Before I took the course I thought of the patient's diet order in terms of protein and calories. Now when I order a diet I think of the patient's needs and how the food is going to satisfy these needs."

Another said: "The real value of the course to me has been in giving me a clear concept of what my patients get when I order a diet, and in enabling me to sit down with a patient and talk to him in terms that he understands."

One student stated in his questionnaire, "In retrospect, the course had much more practical value than I realized at the time I took it."

As teachers, we all meet that challenge. To anticipate the problems that will be encountered in the future, to give the student the viewpoint for discovering them and the tools and techniques for solving them for their patients—these are the contributions which the dietitian can make to this team concerned with the nutrition education of the medical student.

REFERENCE

(1) LEWIS, M. N.: Teaching medical students. J. Am. Dietet. A. 24: 38, 1948.

Intolerance

In an address before the third session of the General Conference of UNESCO (United Nations Educational, Scientific and Cultural Organization) last fall in Beirut, Lebanon, Sir Torres Bodet, Director-General, made a plea for tolerance among the peoples of the world. He referred to the drowning of fifteen children when a boat struck a mine off the Italian coast last year, and saw this as a symbol of the fact that conflicts never cease at any given place or moment, and that guilty parties leave many deadly mines concealed, among the worst of which is intolerance. "To perpetuate intolerance would be to allow our path to be strewn with as fearful a mechanism as that which caused the death of those Italian children on that bright summer day," he said. "But in our case, we would be risking the final destruction of the fundamental principles of human civilization, the abandonment of hope in a new world. To remove the lurking mines of enmity and discord is surely the duty of all men of good will. Let us shoulder that duty for it is at the root of UNESCO's noble mission."

Dietary Management in a Study of Riboflavin Requirements[1]

M. K. HORWITT, GORDON SAMPSON, O. W. HILLS, and D. L. STEINBERG[2]

Biochemical Research Laboratory, Elgin State Hospital, Elgin, Illinois

RECENT reports (1, 2) of two nutritional projects conducted at this institution have not included many details of the dietary methods used. It is the purpose of this paper to record some of these experiences which are basic to the success of human nutritional experiments using the recent riboflavin depletion study as an example.

The two projects differed in that the first was designed to use diets which were deficient in thiamine with low, but not necessarily inadequate amounts of riboflavin, while the second was planned as a study of riboflavin deficiency in the presence of adequate amounts of all the other food essentials. The diets used in the second project were similar to those used in the investigation of thiamine deficiency, the decrease in riboflavin being largely accomplished by halving the meat allotment and by using a specially selected flour very low in riboflavin content.

Three basic diets have been used to date. The diets in the first project, Diets A and B, were designated as "moderately deficient in thiamine" and "severely deficient in thiamine," and provided approximately 400 and 200 mcg. thiamine per day, respectively. These have been reported (1). The third diet, Diet C, providing approximately 550 mcg. riboflavin per day, as was used in the second project, is described below.

CHOICE AND DIVISION OF SUBJECTS

One of the more important considerations in planning a long-term nutritional project is the choice of a subject. Because of the variation in individual nutritional requirements, it is desirable to observe as many subjects as possible. It has been found that between twenty and thirty men could be carefully studied and their diets rigidly controlled with the facilities available. After eliminating those with obvious physical and psychologic incompatibilities, a group containing about 50 per cent more persons than would finally be needed was selected. These were moved into the building designated for the use of the project and observed with great care for about two months. During this period a rigorous dietary regime was maintained with foods similar to those to be used in the study which followed. Attitudes, cooperativeness, and habits of eating were evaluated, and individuals deficient in these respects were eliminated. The final selection did not produce a group that had all the desired qualities, but the effort expended in such careful selection proved worth while. About 90 per cent of the subjects remained in residence for the entire period of the projects which, in the first study, was almost three years.

The thirty male subjects finally selected for the riboflavin study were divided into two groups, Group A and Group B. Group A received the depleted diet and Group B received the same diet plus a tablet containing 2 mg. riboflavin per day. A third group of eleven subjects, called Group C, ate the regular hospital diet in a separate building. Their intake of the food provided was not controlled. The description of the lesions of the skin which developed in the subjects on the diet depleted in riboflavin and the rapid healing which took place when riboflavin was added will be described in detail in another publication. The methods used to control the intake of riboflavin are described below.

BASIC DIETS

In Table 1 are listed the foods used with the estimations of the fats, proteins, and carbohydrates plus analytical data on the content of thiamine and riboflavin. The use of three menus rather than one permitted greater variety in the appearance of the foods,

[1] Supported by grants from the National Vitamin Foundation and the U. S. Public Health Service. Received for publication February 7, 1949.

[2] With the collaboration of Dr. E. Liebert, Dr. C. C. Harvey, Dr. I. Zapolsky, Mary Meyers, O. Lobstein, and W. S. Sullivan. The work was sponsored by the Committee on Vitamin Deficiency Studies at Elgin State Hospital, National Research Council, Food and Nutrition Board, Dr. R. M. Wilder, Chairman, Dr. E. S. G. Barron, Dr. C. A. Elvehjem, Dr. M. K. Horwitt, Dr. A. C. Ivy, Dr. E. Liebert, Dr. D. L. Steinberg, Dr. D. Vail, and Dr. R. D. Williams.

TABLE 1

Three menus used in Diet C, which provided 550 mcg. riboflavin daily

FOOD	PREPARATION	WEIGHT	CARBOHYDRATE	PROTEIN	FAT	CALORIES	THIAMINE	RIBOFLAVIN
Menu 1								
		gm.	*gm.*	*gm.*	*gm.*		*mcg.*	*mcg.*
Farina*	Special	30	21.9	3.6	.4	106	6	57
Rhubarb	Sweetened	100	48.8	.5	.1	174	7	22
Bread	Home baked	200	88.8	12.6	2.8	431	104	125
Margarine	A.P.	50	—	.3	40.5	366	—	10
Jelly	Home made	60	39.0	.1	—	156	6	8
Beef	Round roast	50	—	17.3	3.0	95	23	150
Potatoes	Baked	100	19.1	2.0	.1	85	99	50
Rice	Boiled, washed	50	39.7	3.8	—	174	4	15
Cookies	Special	75	49.7	3.8	14.0	341	30	45
Applesauce	Home canned	100	10.9	.2	.2	46	11	20
Cream, 40%	A.P.	25	.6	.4	6.6	63	5	30
Sugar	A.P.	40	40.0	—	—	160	—	—
Tomatoes	Home canned	50	1.9	.5	.1	10	25	17
Calcium caseinate†	Special	15	—	15.0	—	60	—	13
Total			360.4	60.1	67.8	2267	320	562
Menu 2								
Cornflakes*	Special	30	24.5	2.2	.1	107	6	19
Applesauce	Home canned	100	10.9	.2	.2	46	11	20
Bread	Home baked	200	88.8	12.6	2.8	431	104	125
Margarine	A.P.	50	—	.3	40.5	366	—	10
Jelly	Home canned	60	39.0	.1	—	156	6	8
Salmon (pink)	Canned	50	—	10.2	4.8	84	15	120
Spaghetti	Boiled, washed	50	36.9	6.5	.7	180	39	35
Rice	Boiled, washed	50	39.7	3.8	—	174	4	15
Cabbage	Boiled	50	2.7	.7	.1	15	35	15
Chocolate pudding	Special recipe	100	23.4	.6	9.2	136	2	50
Jello	34%	34	30.0	3.2	—	133	—	15
Corn	Home canned	80	13.0	1.6	.4	61	25	50
Sugar	A.P.	40	40.0	—	—	160	—	—
Cream, 40%	A.P.	25	.6	.5	6.6	64	5	30
Tomatoes	Home canned	50	1.9	.5	.1	10	25	17
Calcium caseinate†	Special	10	—	10	—	40	—	9
Total			351.4	53.0	65.5	2163	277	538
Menu 3								
Cornflakes*	Special	30	24.5	2.2	.1	107	—	19
Applesauce	Home canned	100	10.9	.2	.2	46	11	20
Bread	Home baked	200	88.8	12.6	2.8	431	104	125
Margarine	A.P.	50	—	.3	40.5	366	—	10
Jelly	Home made	60	39.0	.1	—	156	6	8
Beef	Round roast	50	—	17.3	3.0	95	23	150
Potatoes	Baked	100	19.1	2.0	.1	85	99	50
Carrots	Home canned	80	6.1	.8	—	28	25	30
Peaches	Home canned	100	18.2	.4	.1	75	10	22
Rice (dry)	Boiled, washed	50	39.7	3.8	—	174	4	15
Tomatoes	Home canned	50	1.9	.5	.1	10	25	17
Sugar	A.P.	40	40.0	—	—	160	—	—
Dill pickle	Canned	25	.5	.1	—	2	2	12
Cake	Special recipe	65	40.7	2.9	9.5	260	20	35
Cream, 40%	A.P.	25	.6	.5	6.6	63	5	30
Calcium caseinate†	Special	15	—	15	—	60	—	13
Total			330.0	58.7	63.0	2118	334	556

* Unenriched. Supplied by Quaker Oats Company. † Supplied by the Borden Company.

an important factor when thirty or more subjects must partake of this exacting regimen for a period of from one to three years. Even though half the items were served each day, much of the monotony was relieved by changing the taste of foods in casserole dishes by the use of different sauces and seasonings and by varying the combinations of the meals. Variations were planned for a nine-day cycle. The following daily vitamin supplement[3] was given to all the subjects on the riboflavin-depleted diets: thiamine hydrochloride, 0.6 mg.; niacinamide, 10 mg.; pyridoxine, 1 mg.; calcium pantothenate, 3 mg.; biotin, 0.05 mg.; folic acid, 0.1 mg.; ascorbic acid, 50 mg.; vitamin A, 4000 I.U.; and vitamin D, 400 I.U. In addition, 500 mg. dicalcium phosphate was given daily and 180 mg. ferrous sulphate three times weekly.

CONTROL OF THE INTAKE OF FOOD

At the beginning of the study much experimental cooking was done, and records were kept of the weights of precooked and cooked individual foods, but after about ten weeks sufficient data had accumulated to make it possible to eliminate the weighing of individual portions of the uncooked foods and to weigh only the cooked portions. Thus 50 gm. dried farina weighed 200 gm. cooked, and 50 gm. each of spaghetti, macaroni, and rice weighed 175, 200, and 160 gm. respectively, cooked. Whenever practical, the food was prepared and served in individual casseroles. To vary its appearance and taste, a product like rice was served buttered or creamed or prepared in casserole, or as pudding or soup. Special recipes had to be devised in order to include the calcium caseinate which had been added to the diet to raise the protein content. Examples of three of these recipes are given at the end of this paper.

Since different men required different caloric intakes (as determined during the preliminary period), many of the trays were not interchangeable. This made it necessary to double check all trays and their contents before serving. Differences between trays were simplified by considering the average serving as 100 per cent and labeling the others accordingly. Requests for more or less food were met by changing each component on the tray by the same percentage, e.g., the 100 per cent serving became 110 per cent by adding 10 per cent to each component. This procedure simplified bookkeeping and lessened the possibility of error. Any food not eaten was weighed and recorded for each subject, but by stressing the complete consumption of a service, there was seldom any food left to be weighed.

To minimize omissions or undesired changes of procedure, mimeographed sheets containing descriptions of the day's recipes and the amounts of each dietary component to be weighed were prepared daily. Each item was checked off as used. Frequent comments on the importance of the details were made to each person who worked in the diet kitchen in order that the monotony of the procedure should not lessen the individual's enthusiasm for the routine.

The minimal number of personnel found to be necessary to supervise the food consumption of thirty subjects included a dietitian, two cooks, and a nursing attendant or equivalent.

With all due respect to the value of dietary calculations, experience has shown that there is often disagreement between dietary estimations and laboratory analyses (3, 4). A nutritional study which proposes to evaluate a dietary essential should not be attempted unless more exact analyses of the foods in question are conducted simultaneously. The food constituents of approximately half of all the meals served were sent to the biochemical laboratory where the riboflavin content was determined by fluorimetric (5) as well as microbiologic (6) methods. If the assay could not be made on the day in which the food was served, the samples were homogenized in a Waring Blendor and kept at $-18°C.$ until they could be analyzed.

Another check on the nutritional values of the food served was obtained from rat growth experiments. Assuming that the growing rat would show deficiency signs before an adult man if both were fed the same diet, the foods and supplement served in the diet kitchen were homogenized as needed from week to week, and fed to forty-two weanling rats. (The content of iron was increased by the addition of 0.17 gm. ferric ammonium sulphate to the homogenized equivalent of a 24-hr. sample of the diet fed to the human subjects.) These animals were divided into two groups, one receiving the depleted diet given to the subjects of Group A, the second the same diet plus the riboflavin supplement given to the subjects of Group B. The marked retardation of growth in the Group A animals as compared to those who received the supplement of riboflavin was additional confirmation of riboflavin deficiency in the diet used. The animals of Group A averaged 255 gm. in weight 170 days after weaning, whereas those of Group B which received the same diet plus riboflavin, averaged 425 gm. This large difference must be interpreted with caution when making correlations on the effects of the same diet on adult humans. The need for riboflavin by growing tissue is greater than the maintenance needs of the same tissue after growth.

DISCUSSION

No controlled biochemical or clinical study of human nutrition is stronger than the dietary department responsible for the foods ingested. The best of plans are no better than the honesty, sincerity and goodwill of the personnel involved. The dietitian sees the subjects in a controlled environment more

[3] The vitamin supplements used were supplied by Hoffmann-La Roche, Inc.

frequently than any other technician involved in the work. The earliest psychologic changes, and sometimes the first signs of physical disability may become evident during mealtime. Therefore, there should be complete cooperation between the dietetic and the other research departments in order to create an atmosphere of investigative endeavor in the kitchen.

The interpretation of early change in appetite is difficult in a situation where one insists on the consumption of the entire serving. Portions not eaten at one meal were added to the meal which followed and the few changes which were made in the percentage of the diet of any subject were based upon appetite behavior patterns which had been maintained for several weeks. Special credence was given to requests for more or less food when they were associated with body weight changes.

In a study such as this, the kitchen staff must be alert to anticipate errors of procedure or lack of cooperation by the subjects. For example, in the previous study when one subject ingested a supplement that was not intended for him, the clinician was immediately notified and a stomach pump was used, all within a few minutes. The atmosphere created by this emergency produced an impression of urgency which helped prevent similar accidents in the future.

The results of the study of riboflavin requirements, the dietary phase of which lasted more than eighteen months, will be published in detail elsewhere. In summary, it may be said that a diet which provided about 550 mcg. riboflavin per day to inactive individuals who were able to maintain their weight on 2200 calories per day was not sufficient to prevent the development of skin lesions, some of which were similar to those previously characterized as due to ariboflavinosis. Such lesions were rapidly healed when riboflavin was added to the diet.

RECIPES

Casserole

Yield: 1 serving

Ingredients	*Amount*
Ground roast beef	50 gm.
Boiled rice	160 gm.
Calcium caseinate	15 gm.
Drippings	3 oz.
Home canned tomato	50 gm.

Directions:

1. Combine ingredients and stir.
2. Bake at 350°F. for 20 min.

Chocolate Corn Starch Pudding

Yield: 3000 gm. Portion 100 gm.

Ingredients	*Amount*
Corn starch	180 gm.
Sugar	567 gm.
Salt	1 tsp.
Vanilla	2 tsp.
Margarine	310 gm.
Water	84 oz.
Calcium caseinate	300 gm.
Cocoa	93 gm.

Directions:

1. Mix corn starch, sugar, cocoa, salt, and calcium caseinate together.
2. Add water.
3. Add margarine and vanilla when nearly thick.
4. Cook until thick, stir while cooking.

Ginger Snaps

Yield: 175 cookies

Ingredients	*Amount*
Sugar	850 gm.
Shortening	710 gm.
Flour	800 gm.
Molasses	250 gm.
Ginger	20 gm.
Cinnamon	20 gm.
Baking soda	20 gm.
Calcium caseinate	525 gm.
Water	approx. 300 gm.

Directions:

1. Mix ingredients into a dough and shape into balls weighing 20 gm. each.
2. Flatten balls and bake at 375°F.

REFERENCES

(1) Horwitt, M. K., Liebert, E., Kreisler, O., and Wittman, P.: Investigations of human requirements of B-complex vitamins. National Research Council Bull. No. 116, 1948.

(2) Horwitt, M. K., Hill, O. W., Harvey, C. C., Liebert, E., and Steinberg, D. L.: Investigation of riboflavin requirements. In preparation.

(3) Horwitt, M. K., Cowgill, G. R., and Mendel L. B.: The availability of the proteins and inorganic salts of the green leaf. J. Nutrition 12: 237, 1936.

(4) Horwitt, M. K., Cowgill, G. R., and Mendel, L. B.: The availability of the carbohydrates and fats of the green leaf together with some observations on crude fibre. J. Nutrition 12: 255, 1936.

(5) Slater, E. C., and Morell, D. B.: A modification of the fluorimetric method of determining riboflavin in biological materials. Biochem. J. 40: 644, 1946.

(6) Roberts, E. C., and Snell, E. E.: An improved medium for microbiological assays with Lactobacillus casei. J. Biol. Chem. 163: 499, 1946.

Danger to Teeth in Overeating

According to Dr. John H. Greene of Philadelphia, who spoke at the American Dental Association meeting last September, overeating is as bad for teeth as it is for the figure. He said, "Overeaters usually have more tooth troubles than undereaters." The most pernicious offender is the perpetual muncher—the one with a roll of hard candies in the handbag or a dish of chocolates on the table.

He asserted that the person who eats two meals a day is a better dental risk than the one who eats three—or six or eight—and he advocated the elimination of desserts entirely, unless they are fruit or something raw.—*From Chicago Daily Tribune, September 15, 1948.*

New York State Nutrition Survey

I. A Nutrition Survey of Public School Children[1]

MARTHA TRULSON, D. MARK HEGSTED, and FREDRICK J. STARE[2]

Department of Nutrition, Harvard School of Public Health, Boston

EVALUATING the nutritional status of population groups is a difficult undertaking. Many of the studies which have been made have involved laboratory research and detailed dietary histories. In general, it has not been feasible for health departments to apply such methods to the practical and important problem of investigating the nutritional status of large groups of people (1, 2).

At the request of the Governor of the State of New York, the New York State Food Commission which had been established during World War II was reactivated in October, 1947, to deal with various food problems confronting the state. As a part of the program, a nutritional survey of the state was undertaken, which was expected to be the first of a series to help determine the general nutritional status and trends of the people. The survey has been an attempt to apply practical methods to the investigation of an important public health problem, namely, the nutritional conditions that exist within the State of New York that may be expected to influence the nutritional status of the people and hence the public health, and what is also important, to conduct this study largely by using existing departments and agencies already familiar with the community and the state organization. The project was planned as a cooperative effort of many New York State and New York City departments, public and private agencies, two universities having departments of home economics and nutrition, and the Harvard School of Public Health.

A committee from the New York State Food Commission, with the assistance of the Nutrition Department of the Harvard School of Public Health, the School of Nutrition of Cornell University, and the New York State and City Health Departments, planned the broad aspects of the program. Another committee consisting of nutritionists and public health nurses from the New York State and City Health Departments, scientists from the School of Nutrition at Cornell, and consultants from the Harvard School of Public Health worked out the specific plans of the survey. This committee contacted the agencies and departments that were asked to participate in the study. One nutritionist in charge of the study was employed full time for approximately eight months. Three consultants, including a nutritionist, a public health nurse, and an economist with nutritional and statistical experience, helped for several weeks.

State departments having personnel that participated in the project included: Bureau of Nutrition, Division of Maternal and Child Health; Office of Vital Statistics of the Health Department; Department of Labor; Department of Commerce; and Department of Education, as well as the Division of Nursing and of Nutrition of the New York City Health Department, various private and public visiting nurse associations, Cooperative Extension Service of New York State, and the Home Economics Departments of the School of Nutrition and New York State College, Cornell University, and the Department of Home Economics of Syracuse University.

It was generally agreed that it was impossible and

[1] Supported in part by grants-in-aid from the New York State Food Commission, the Nutrition Foundation, Inc., New York City, and the Milbank Memorial Fund, New York City. Received for publication January 26, 1949.

[2] The authors wish to express their appreciation to Elizabeth K. Caso, Drs. George V. Mann and Donald M. Watkin of the Department of Nutrition, Frances Frazier of the Department of Public Health Administration, Dr. Stanton Garfield of the Department of Maternal and Child Health, and to Dr. Jane Worcester of the Department of Biostatistics, Harvard School of Public Health, Boston; Dr. Jane Ogle, Committee on Research in Social Science, Harvard University, Cambridge; Drs. Harry Shwachman and Jack Metcoff, Children's Hospital, Boston; Dr. John D. Crawford, Pediatric Service, Massachusetts General Hospital, Boston; G. Dorothy Williams and staff, Division of Nutrition, New York City Health Department; Dr. Charlotte Young, School of Nutrition, Cornell University, Ithaca; Marguerite J. Queneau and staff, Bureau of Nutrition, New York State Health Department; Elizabeth Parkhurst and Frances Locke, Office of Vital Statistics, New York State Health Department, Albany; and Dr. Granville W. Larrimore and the staff of Public Health Education, New York State Health Department.

TABLE 1

General plan of New York State nutrition survey

GROUP	NUMBER OF SUBJECTS			TYPE OF STUDY	WORKERS CONDUCTING SURVEY
	New York City	Upstate New York	Total		
Public school children					
4th grade	1784	3097	4881	3-day food intake record; height-weight and physical appraisal	State Department of Education
10th grade	1655	3007	4662	3-day physical appraisal	New York City Board of Education
1st grade				physical appraisal	Harvard School of Public Health
Adults					
Pregnant women (low-income)	723	844	1567	interview on previous day's food intake	Upstate New York—State Health Department New York City—City Health Department
Homemakers	2599	2770	5369	interview on previous day's food intake	Upstate New York—State Extension Service, Cornell University; Rochester Visiting Nurse Association; Department of Home Economics, Syracuse University New York City—City Health Department, Visiting Nurse Service of New York, Brooklyn Visiting Nurse Assotion
Industrial workers	0	1189	1189	1-day food intake record	Upstate New York—State Department of Labor
Family units					
Veterans attending college	0	70	70	7-day itemized food purchase record	Cornell University Housing Project—Cornell School of Nutrition Syracuse University Housing Project—Department of Home Economics, Syracuse University
Low-income families	55	10	65	7-day itemized food purchase record	Upstate New York—State Health Department New York City—City Health Department and Community Service Society
Food purchase trends*	132	1403	1535	questionnaire	Women's clubs—under direction of New York Women's Council, State Department of Commerce

* Not analyzed because of insufficient data.

impractical to attempt a random sample of the State of New York; thus it was decided to choose stress groups, such as school children and pregnant women. Other groups easily available for study included industrial workers, homemakers, club women, and families from low rental areas. The selection of the sample will be explained later in the discussion of each specific study.

The methods used were of two general types:

(a) The determination of foods eaten, as shown by dietary records, interviews, questionnaires, and family purchase records.

(*b*) Physical appraisals of pupils.

The survey was conducted between December 1 and 15, 1947. The general plan of the survey is shown in Table 1.

The response to the survey was satisfactory, except for the collection of data on food purchases. This failure resulted because the time between the organization of the survey and the collecting of the data was extremely short, approximately three weeks, and there was insufficient preliminary planning with club leaders. Also, many clubs did not have December meetings and thus could not participate. The study of food purchase trends yielded a percentage of returns too small for proper analysis. A total of 9543 three-day dietary records, 8125 one-day dietary records and interviews, 135 seven-day family food purchase records, and 3561 physical appraisals were obtained.

The report that follows gives the analysis of food records and physical appraisals of school children.

SELECTION OF THE SAMPLE

School children are particularly convenient to include in a nutritional study. They are accessible, they are in groups of similar ages, and in the larger city schools they can be classified according to the economic level of the population and according to racial predominance. Secondary schools may be classified as academic and vocational. Personnel able to assist with the survey, such as teachers, home economics supervisors, cafeteria managers, and school nurses, are also available.

The information relating to the food practices of New York public school children was derived by analyzing approximately 10,000 three-day dietary records. A total of 3561 physical appraisals—1195 from the first grade, 1126 from the fourth grade, and 1240 from the tenth grade—were obtained.

Fourth grade children were chosen to contribute dietary records since they were the youngest group that could write legibly. The tenth grade represented the adolescent group. The size of the sample was not based upon the school population but upon the number of records which might show a trend and which could be analyzed statistically with the available help. The sample was chosen to represent a cross section of the school population. A total of 9543 public school children submitted three-day dietary records. This represented 0.5 per cent of the school registration, based upon the 1943–1944 census (3). The fourth grade dietary records numbered 4881 or 3.4 per cent of the fourth grade census, and the tenth grade dietary records totalled 4662 or 2.7 per cent of the registration for that grade. In New York City, the schools were selected on a racial and economic basis. The elementary schools were classified as low, medium, or high, according to the average income of the districts they served. The secondary schools were divided into academic and vocational.

In selecting schools in the upstate area, an attempt was made to obtain a representative cross section of schools with regard to type of population served, i.e., city schools, those suburban to large cities, and village and rural schools from various parts of the state. Every main division by both urban and rural schools was included, although not every county.

The actual selection of schools was done in consultation with the State Department of Education. At least three schools were selected from each of the large cities on the basis of the general economic status of the population served. In the smaller cities, all of the schools were asked to cooperate.

The registration in the fourth and tenth grades of most of the schools selected was known, so that sufficient schools were chosen to represent about 5000 children in the upstate area distributed according to size of place in approximately the same proportion as the total population upstate at the 1940 census. Exact correspondence could not easily be obtained because of the desirability of choosing schools from several small cities and villages, and the impracticability of selecting a sample of children from these schools. Also, some of the schools failed to cooperate. The general result was an under-representation of children in cities of 100,000 or more population and an over-representation of children in places of 2500 to 10,000. The high school sample was somewhat less representative than the fourth grade, due to the fact that one of the large city high schools failed to report. Also, although in some of the medium sized cities only certain elementary schools were selected, all of the high schools of these cities were surveyed.

The distribution of the upstate sample was according to the population of the 1940 census.

First, fourth, and tenth grade pupils were appraised physically. The pupils were selected from the larger cities because of easy accessibility and the limited time available for the study. New York City schools were unable to participate extensively in this part of the project. One of the larger schools where physical appraisals were done failed to take part in the dietary program. Because of the difference in the sample, it was impossible to correlate the physical appraisals and dietary records effectively.

METHODS

Booklets for keeping dietary records were distributed to the school children a few days before the records were to be made. The children were asked to record everything that they had eaten or drunk for three days—Tuesday, Wednesday, and Thursday. Instructions to the children were included in the booklet. Additional instructions were sent to the teachers. Age, sex, school, and occupation of the principle wage earner were also recorded.

The material from the three-day dietary record was tabulated for total protein, animal protein, non-animal protein, milk (including milk products and cheese), meat (including fish and poultry), legumes, breads and cereals, potatoes, fruits and vegetables high in ascorbic acid, fruits and vegetables high in carotene, and total servings of fruits and vegetables. Milk was recorded in cups. Milk used in mixed dishes and for beverages and cereals was approximated in cups according to coding direction. For example, the milk used on cereal was considered ½ cup; milk for cream soups, ½ cup; and so on. The total cups of milk were multiplied by 8 (the grams of protein in an 8-oz. cup of milk) to give the grams protein derived from milk (4). A serving of meat was estimated to be 3 oz. Meat was recorded in servings. The servings were standardized; for example, a pork chop was considered a serving of meat and a lamb chop a half serving. The amount of meat in mixed dishes was approximated; stew with vegetables was a half-serving, a "hot dog" sandwich was a half-serving, and so on. Bacon and salt pork were not considered as meat. The servings of meat were multiplied by 21 (the grams of protein in an

average 3-oz. portion of meat, fish, or poultry) to give the approximate grams protein from the meat. Eggs were recorded as one serving for one egg. The eggs used in cooking such foods as custards, cream pie fillings, salads, and sandwiches were estimated. The number of eggs was multiplied by 7 (the grams of protein found in an average egg). The sum of the protein from milk, meat, and eggs was the total animal protein.

Breads and cereals were listed in servings and the number multiplied by 2 (the grams of protein in an average slice of ready-sliced bread). Potatoes, including sweet potatoes but excluding potato chips, were tallied. The servings were multiplied by 3 (the grams of protein in a 5-oz. potato). Legumes, including nuts, were listed in servings and the number multiplied by 7 (the grams of protein in ½ cup baked beans). The sum of the protein from the bread and cereal, potatoes, and legumes was the non-animal protein content of the diet.

It was estimated that approximately 5 gm. of protein would be lost from this procedure, since the protein content of fruits and vegetables other than potato was not considered. Thus, in the tables 5 gm. have been added to the total protein.

Fruits and vegetables were grouped as high in ascorbic acid and high in carotene, and the total servings of all fruits and vegetables were used. Fruits and vegetables that were considered important sources of ascorbic acid included: orange, grapefruit, tangerine, cabbage, strawberries, juice of one lemon, tomato, sauerkraut, and peppers. Tomato soup was not included. Fruits and vegetables considered high in carotene were: dried apricots and peaches, string beans, greens of any kind, broccoli, carrots, okra, pumpkin, winter squash, tomato, green lettuce, and endive when used as a whole salad, and sweet potato. The total fruits and vegetables were tallied by adding those high in ascorbic acid and in carotene plus any other fruit and vegetable in the dietary record.

An average for one day was calculated from the three-day dietary record. The subjects have been grouped according to area, i.e. entire state, New York City, and upstate New York. Children from upstate New York were classified according to the population concentrations of their community. There were six population categories; (a) over 100,000; (b) 50,000 to 100,000; (c) 25,000 to 50,000; (d) 10,000 to 25,000; (e) 2500 to 10,000; and (f) under 2500. Fourth grade children from New York City were grouped by the average income of the area in which the schools were located as low-, medium-, and high-income. Tenth grade records were sorted according to academic and vocational schools. The data for fourth grade boys and girls were combined, but in the tenth grade were reported separately. Answers concerning the principal wage earner were uninformative since many children wrote names of firms where their parents worked and not their occupations.

In this report the consumption of total protein, cups of milk, servings of meat, servings of fruits and vegetables high in ascorbic acid and high in carotene are reported. The information regarding the consumption of breads, potatoes, legumes, and total servings of fruits and vegetables are not presented in detail since the meaning of differences is more difficult to interpret in terms of adequacy of the diet. To conserve space the distribution of the data according to population concentration and the results of the statistical tests were omitted from the publication, but have been included in the discussion.

The physical appraisals were not detailed physical examinations. They represented the impressions of a pediatrician or physician, trained to include nutrition in his diagnostic thinking, as to whether the child appeared to be in good health. If the child did not appear in good health, particularly in good nutritional status, the apparent reason was indicated. Each lesion was given a number and as the examining physician called the number, it was recorded by the teacher or clerk. The data were classified according to the number of lesions noted. The following lesions were noted:

Angular stomatitis
Bitot's spots
Bossing
Calf tenderness
Cheilosis
Cleanliness
Conjunctival thickening and dryness
Current infections
Denuded lower lip
Edema
Epiphyseal enlargement
Harrison's groove
Inanition (gross)
Keratosis folliculosis
Koilonychia
Long bone deformity
Magenta tongue with follicular hypertrophy
Non-specific dermatitis
Non-specific gingivitis
Non-specific glossitis
Pallor
Peroneal tenderness
Poor muscle tone and turgor
Protuberant abdomen
Rosary beading
Seborrheic dermatosis
Specific dermatitis (pellagra, scurvy)
Suggested non-nutritional pathology
Straight staring hair
Teeth—carious, unfilled
Teeth—poor dental hygiene
Thyroid hypertrophy

RESULTS

A total of 9543 three-day dietary records of New York public school children were collected and analyzed. Fourth grade pupils submitted 4881 records and tenth grade pupils 4662. The mean age of the fourth grade pupils was 9.2 years; for tenth grade boys, 15.4; and for tenth grade girls, 15.2.

Protein

The Recommended Dietary Allowances of the National Research Council (5) are: 60 gm. protein daily for children nine years old; 85 gm. for boys between thirteen and fifteen years of age; and 80 gm. for girls of thirteen to fifteen (5). From Table 2 it can be seen that approximately 74 per cent of the fourth grade pupils were receiving diets that met the standard. Four per cent were getting approximately two-thirds or less of the recommended amount, and

18 per cent ranged between two-thirds and 100 per cent of the standard. The mean protein intake—74 gm.—was considerably above the recommended amount. Upstate children tended to use slightly more protein than did those from New York City. A relation of income to protein consumption was found in New York City. In the schools serving high-income areas, 2 per cent reported diets of less than 45 gm. protein compared to 5 per cent in schools serving medium- and low-income areas.

Of the tenth grade boys surveyed (Table 3), 59 per cent of the sample consumed 85 or more gm. protein as a daily average. Approximately 5 per cent had diets which contributed less than two-thirds of the recommended amount and 36 per cent of the boys took diets ranging from two-thirds to 100 per cent of the standard. The mean protein intake was 93 gm. There was a tendency for upstate boys to receive more protein than those from larger cities. However, as noted previously, the group of students represented in the over-100,000-population category was not a representative sample, since it was composed mainly of students of a vocational school in one city. While there was no significant difference in the protein intake of academic and vocational pupils in New York City, a wide variation in protein consumption was observed in some of the individual schools. For example, in one vocational school only 26 per cent received 85 or more gm. protein, compared to 75 per cent in one academic school.

Thirty-seven per cent of the tenth grade girls met the standard of 80 gm. protein. Thirteen per cent had less than two-thirds of this amount and half took between two-thirds and 100 per cent of the standard. The mean protein intake was 75 gm. Protein intake in New York City was slightly but significantly higher than in upstate New York. Thirty-nine per cent of the New York City girls took 80 or more gm. protein, and 36 per cent of the girls in upstate New York had this amount. As with the tenth grade boys, the protein intake was slightly higher in the smaller communities. The sample of tenth grade girls from cities over 100,000 population was the same as the tenth grade boys so that the data are not necessarily representative. In New York City almost half the girls in academic schools used 80 or more gm. protein; about one-third of the vocational students used this amount.

TABLE 2

Average daily protein intake of fourth grade pupils

PROTEIN INTAKE	PERCENTAGE OF PUPILS					
	Entire state	New York City				Upstate New York
		Total	Low-income	Medium-income	High-income	
gm./day						
Under 35	1	1	1	1	1	1
35–44	3	3	4	4	1	3
45–54	8	9	9	13	6	8
55–64	18	21	25	18	22	16
65–74	24	26	27	24	29	23
75–84	21	20	16	18	24	22
85–94	13	11	9	12	12	14
95–104	6	5	5	6	3	7
105–114	3	2	2	3	1	3
115 and over	3	2	2	1	1	3
Mean (gm.)	74	72	71	72	73	75
Standard deviation	±17.3	±16.5	±17.4	±17.6	±14.8	±17.9
Total students	4881	1784	604	549	631	3097

TABLE 3

Average daily protein intake of tenth grade pupils

PROTEIN INTAKE	PERCENTAGE OF BOYS					PERCENTAGE OF GIRLS				
	Entire state	New York City			Upstate New York	Entire state	New York City			Upstate New York
		Total	Academic high school	Vocational high school			Total	Academic high school	Vocational high school	
gm./day										
Under 45	2	2	1	2	1	5	6	3	9	4
45–54	3	4	3	6	3	8	8	3	12	8
55–64	7	8	7	9	8	15	15	13	17	16
65–74	13	11	9	12	14	24	22	22	21	25
75–84	16	15	17	15	16	21	19	22	16	22
85–94	17	16	17	16	18	14	15	17	13	13
95–104	14	14	15	13	14	8	8	10	7	8
105–114	11	11	10	11	11	4	5	6	4	3
115–124	7	7	9	6	6	1	1	2	0	1
125 and over	10	12	12	10	9	0	1	2	1	0
Mean (gm.)	93	94	94	93	93	75	76	79	72	75
Standard deviation	±25.6	±27.3	±23.9	±25.5	±24.3	±18.1	±19.5	±18.2	±19.8	±17.3
Total students	2302	891	432	459	1411	2360	764	369	395	1596

Milk

To supply substantial amounts of protein, calcium, and riboflavin, it is generally recommended that the diet of the nine-year-old child should contain three or more cups of milk and that of the adolescent, four or more cups (6). Milk intake is shown in Table 4. Eleven per cent of the fourth grade pupils reported less than a pint and 21 per cent took between two and the recommended three cups. The consumption of milk was slightly higher in New York City than upstate. The intake in populations under 2500 was the poorest—61 per cent took three or more cups and 16 per cent less than a pint. In New York City, milk intake increased with increased income.

The study of tenth grade boys revealed that 39 per cent included four or more cups of milk in the daily diet, 16 per cent had less than two cups, and 45 per cent took between two and the recommended four cups. There was no significant difference between boys in New York City and in upstate New York, but there was considerable difference in the population concentrations in upstate New York. As with protein, those boys predominantly from a vocational school in a city of over 100,000 used the smallest amount of milk. Fourteen per cent took four or more cups, and 34 per cent had less than two cups. The boys from towns of 2500 or less had the next lowest milk intake; 34 per cent had four or more cups and 13 per cent had less than two cups. In New York City, boys from academic schools took more milk than those from vocational schools.

The adolescent girls had the smallest milk intake of the children surveyed. Of the entire sample, 22 per cent received four cups as a daily average and 23 per cent less than a pint. There was little difference in milk consumption by New York City and upstate tenth grade girls. As with the adolescent boys, the poorest consumption was in the cities of over 100,000. Fifteen per cent took four or more cups and 28 per cent had less than a pint. The communities of 2500 had the next lowest percentage of girls receiving four cups of milk, 19 per cent took four or more cups, and 26 per cent less than a pint. The milk intake of girls from academic schools in New York City was appreciably higher than that of vocational pupils.

TABLE 4

Average daily milk intake of students

GROUP	PERCENTAGE OF STUDENTS* CONSUMING VARIOUS LEVELS OF MILK				
	Milk intake less than 1 cup daily	Milk intake 1 cup to less than 2 cups daily	Milk intake 2 cups to less than 3 cups daily	Milk intake 3 cups to less than 4 cups daily	Milk intake of 4 cups or more daily
Fourth Grade Pupils					
Entire state	2	9	21	36	32
New York City	1	7	21	38	33
Low-income	1	9	28	36	26
Medium-income	2	7	19	34	38
High-income	0	5	17	45	33
Upstate New York	3	10	20	35	32
Tenth Grade Boys					
Entire state	4	12	20	25	39
New York City	3	13	21	23	40
Academic high school	2	10	18	28	42
Vocational high school	4	17	23	18	38
Upstate New York	4	10	20	27	39
Tenth Grade Girls					
Entire state	6	17	26	29	22
New York City	5	20	25	26	24
Academic high school	3	13	23	31	30
Vocational high school	6	25	26	23	20
Upstate New York	6	17	27	30	20

* See Tables 2 and 3 for number of students.

Meat (Including Fish and Poultry)

Total protein has already been reported. However, because of the importance of meat in contributing to the mineral and vitamin as well as pro-

TABLE 5

Daily average meat intake of students

GROUP	PERCENTAGE OF STUDENTS* CONSUMING VARIOUS AMOUNTS OF MEAT		
	No meat eaten in three days	Meat intake less than 1 serving daily	Meat intake 1 serving or more daily
Fourth Grade Pupils			
Entire state	3	37	60
New York City	3	37	60
Low-income	4	36	60
Medium-income	5	45	50
High-income	1	29	70
Upstate New York	3	38	59
Tenth Grade Boys			
Entire state	1	14	85
New York City	0	13	87
Academic high school	0	9	91
Vocational high school	0	15	85
Upstate New York	1	16	83
Tenth Grade Girls			
Entire state	1	23	76
New York City	1	21	78
Academic high school	0	13	87
Vocational high school	2	28	70
Upstate New York	1	23	76

* For number of students, see Tables 2 and 3.

tein content of the diet, the consumption has been tabulated (Table 5). Sixty per cent of the fourth grade pupils averaged a serving or more of meat daily, only 3 per cent did not have any during the three days, and 37 per cent had meat in amounts of less than one serving per day. The consumption of meat did not vary significantly between New York City and upstate New York. In comparing the population concentration, pupils from cities of over 100,000 used the most meat; 68 per cent averaged a daily serving. Those from populations of 25,000 to 50,000 and under 2500 had the fewest servings of meat; only 53 per cent reported a daily serving. In New York City there was considerable variation when the division was made on a basis of income—70 per cent from high-income schools, 50 per cent from medium-income schools, and 60 per cent from low-income schools had a daily serving of meat.

Meat intake was high among adolescent boys. Of the total sample, 85 per cent averaged one or more servings of meat. Only 1 per cent had no meat, fish, or poultry during the three days. There was no significant difference in the use of this food in New York City and upstate New York.

In comparing the population levels, it was observed that while the pupils from the cities of over 100,000 had presented dietary records that were lower in all other protective foods, the amount of meat was essentially the same as that consumed in other areas. The boys from areas of under 2500 population reported using the smallest amount of meat. Seventy-nine per cent used one or more servings daily. There was no significant difference in the amount of meat eaten by academic and vocational students.

A serving or more of meat was averaged daily by 76 per cent of the tenth grade girls. Only 1 per cent did not record any. There was no significant difference in the use of these foods in New York City and upstate New York. In upstate schools 80 per cent of the girls from towns of 10,000 to 25,000 had a serving or more of meat daily, and the lowest consumption occurred in the areas of over 100,000 and between 2500 to 10,000 where 74 per cent consumed one or more servings. Girls in academic high schools reported using somewhat more meat than girls in vocational schools.

Fruits and Vegetables High in Ascorbic Acid

As shown in Table 6, 50 per cent of the fourth grade pupils averaged one or more servings of a fruit or vegetable high in ascorbic acid, 16 per cent received none in three days, and 17 per cent used two in the three-day period. These foods were used in significantly greater amounts by children from New York City than by upstate pupils. A third of the children from populations between 10,000 to 25,000 reported a daily serving and 25 per cent none. Children from schools designated as high-income in New York City consumed the greatest number of servings. Pupils from low-income schools used more fruits and vegetables high in ascorbic acid than did those from schools serving medium-income areas.

In the analysis of the food records of tenth grade boys, 45 per cent were found to average a daily serving and about a fourth did not have any during the three days. Sixteen per cent had one serving and 15 per cent two servings in three days. There was no apparent difference in intake by boys from New York City and upstate. In upstate New York the poorest intake of these fruits and vegetables occurred with the boys from cities of over 100,000 where 40 per cent had none and 22 per cent only one daily serving. The highest consumption, 53 per cent receiving a daily serving, was reported by children living in communities of 50,000 to 100,000. The intakes of boys from rural communities was similar to the other sections of the state. Boys from academic high schools used significantly greater amounts than did those from vocational schools.

Forty-six per cent of the tenth grade girls had one or more servings daily, 17 per cent had none, 18 per cent had one, and 14 per cent had two servings. New York City girls used more of this food than did

TABLE 6

Average daily intake of fruits and vegetables high in ascorbic acid (assuming average servings)

GROUP	PERCENTAGE OF STUDENTS* CONSUMING VARIOUS AMOUNTS OF FOODS HIGH IN ASCORBIC ACID			
	None eaten in 3 days	1 serving in 3 days	2 servings in 3 days	1 serving or more daily
Fourth Grade Pupils				
Entire state	16	17	17	50
New York City	11	14	15	60
Low-income	12	16	17	55
Medium-income	16	18	16	50
High-income	7	8	13	72
Upstate New York	19	19	20	45
Tenth Grade Boys				
Entire state	24	16	15	45
New York City	21	18	16	45
Academic high school	13	14	16	57
Vocational high school	29	21	17	33
Upstate New York	25	15	15	45
Tenth Grade Girls				
Entire state	17	18	19	46
New York City	15	15	21	49
Academic high school	13	13	20	54
Vocational high school	17	18	22	43
Upstate New York	18	20	17	45

* For number of students, see Tables 2 and 3.

those from upstate New York. In upstate New York the intake of the girls followed the pattern of adolescent boys; the poorest showing was in the pupils from cities of over 100,000 where about a third of the girls had a daily serving, and 21 per cent reported none. In the 50,000 to 100,000 population group, 51 per cent met the standard and 11 per cent had none. The use of the foods in the smaller communities was about the same as the rest of the state. There was a trend for the girls from academic high schools to consume more of these foods than those from the vocational schools.

Fruits and Vegetables High in Carotene

The consumption of fruits and vegetables high in carotene is shown in Table 7. The records of fourth grade pupils revealed that 48 per cent of the children took one or more servings of fruits or vegetables high in carotene daily, 15 per cent reported none, 18 per cent one serving, and 19 per cent two servings in the three-day period. There was a significantly greater intake in New York City than in upstate New York. Fifty-three per cent of the fourth grade pupils from cities of over 100,000 used these foods daily, and those from areas under 2500 people used the least—34 per cent averaging one or more daily and 19 per cent having none in three days. As with other protective foods, children with the highest income had the greatest intake.

TABLE 7

Average daily intake of fruits and vegetables high in carotene (assuming average servings)

GROUP	PERCENTAGE OF STUDENTS* CONSUMING VARIOUS AMOUNTS OF FOODS HIGH IN CAROTENE			
	None eaten in 3 days	1 serving in 3 days	2 servings in 3 days	1 serving or more daily
Fourth Grade Pupils				
Entire state	15	18	19	48
New York City	12	15	18	55
Low-income	13	16	18	53
Medium-income	14	21	22	43
High-income	9	10	13	68
Upstate New York	16	20	20	44
Tenth Grade Boys				
Entire state	14	16	17	53
New York City	10	14	14	62
Academic high school	4	10	10	76
Vocational high school	15	17	18	52
Upstate New York	16	18	18	48
Tenth Grade Girls				
Entire state	8	15	19	58
New York City	6	12	18	64
Academic high school	2	9	18	71
Vocational high school	10	15	18	57
Upstate New York	9	16	20	55

* For number of students, see Tables 2 and 3.

The dietary record of the tenth grade boys showed daily servings in 53 per cent of the records, 14 per cent used none, 16 per cent one serving, and 17 per cent two servings during the three-day period. The boys from New York City had more of these good sources of carotene than did those from upstate New York. Boys from cities of over 100,000 used the fewest foods high in carotene, 32 per cent having a daily serving. Pupils from communities of less than 2500 reported the next lowest intake, 44 per cent using one serving daily. Boys attending academic high schools used significantly more foods high in carotene than did those in vocational schools.

Fifty-eight per cent of the tenth grade girls used fruits or vegetables high in carotene daily, 8 per cent had none in the three-day period, 15 per cent one serving, and 19 per cent two servings. As with the adolescent boys, the intake of these foods was significantly greater in New York City than upstate. In the three highest population concentrations of upstate New York, 60 per cent or over averaged a daily serving. In the three smaller population concentrations, 47 to 53 per cent reported using one or more servings. As with the other protective foods, girls in academic high schools used significantly greater amounts.

Physical Appraisals

The physical appraisals of children from New York City, Albany, Binghamton, Utica, and Buffalo involved a total of 3561 children. Roughly 50 per cent of the children showed some physical lesion which may or may not have had nutritional significance. It can be seen from Table 8 that carious teeth and poor dental hygiene constituted the principal defect. Approximately 10 per cent of the children showed lesions which were perhaps more definitely suggestive of some degree of poor nutrition.

DISCUSSION

All survey methods present data which may be criticized on various scores. The written dietary records obtained in this study are, of course, approximations and the magnitude of the errors in some of the records is undoubtedly great. As will be shown later, it is believed that the mean values obtained are essentially correct. Perhaps the errors of omission and commission are nearly equal, but the records indicating low intakes are more pertinent in a dietary survey than those which are above average. These values represent both those actually low and those which were inaccurately recorded. No estimate of the relative importance of these two possible reasons in producing the values obtained is available.

Similarly, the evaluation of the data presents obvious difficulties. The evaluation of certain foods

in servings only instead of in actual weights or units of the nutrient being studied may be justified because it simplifies the evaluation of the data and, considering the marked variation in vitamin content of fruits and vegetables, is probably adequate. The National Research Council Recommended Dietary Allowances (5) are sufficiently high that they can scarcely be reached unless the protective foods are eaten.

The selection of appropriate standards is also difficult. For example, the mean age of tenth grade pupils surveyed was 15.3 years but a considerable percentage had passed their sixteenth birthday. The National Research Council Allowances recommended 100 gm. protein for the sixteen-year-old compared to 85 gm. for the fifteen-year-old. The latter figure was used as the standard in this study. Ninth grade pupils might have been a more uniform group in this respect.

TABLE 8

Findings during physical appraisals of first, fourth, and tenth grade students

LESIONS OBSERVED	TOTAL	FIRST GRADE PUPILS	FOURTH GRADE PUPILS	TENTH GRADE BOYS	TENTH GRADE GIRLS
Teeth, carious, unfilled	839	359	362	28	90
Teeth, poor dental hygiene	184	54	60	29	41
Nonspecific gingivitis	49	6	31	12	—
Suggestive non-nutritional pathology	229	119	72	9	29
Current infection	51	21	10	10	10
Cleanliness	22	11	11	—	—
Nonspecific glossitis	187	42	112	12	21
Keratosis follicolosis	130	62	47	5	16
Denuded lower lip	74	28	43	2	1
Seborrheic dermatosis	57	7	34	4	12
Angular stomatitis	21	7	14	—	—
Nonspecific dermatitis	266	35	17	85	129
Specific dermatitis (pellagra, scurvy)	2	2	—	—	—
Koilonychia	1	—	1	—	—
Magenta tongue	5	3	2	—	—
Cheilosis	2	—	2	—	—
Calf tenderness	1	—	1	—	—
Conjunctival thickening and dryness	28	5	19	2	2
Straight staring hair	6	3	3	—	—
Bitot's spots	3	1	1	1	—
Thyroid hypertrophy	27	1	5	2	19
Inanition (gross)	25	13	9	1	2
Poor muscle turgor	58	29	14	7	8
Pallor	129	56	31	11	31
Protuberant abdomen	28	15	13	—	—
Harrison's groove	164	90	68	3	3
Rosary beading	63	30	33	—	—
Bossing	44	29	15	—	—
Long bone deformity	8	1	6	1	—
Epiphyseal enlargement	6	6	—	—	—
Total examined	3561	1195	1126	489	751
Total lesions	2710	1036	1036	224	414

The representation of groups in income categories may not at this time follow previous patterns. The children said to be from the medium-income levels consistently consumed smaller amounts of protective foods than did those from the low-income groups. It is possible that under present conditions the so-called low-income labor class may be relatively better off financially than the medium-income white collar workers and may have spent more for food.

The standards used in this study were those recommended by the National Research Council (5). Inasmuch as these allowances are intended to serve as a guide to include the needs of all types of individuals, they include a margin of safety to cover those persons who may have higher requirements. Thus the allowances are undoubtedly higher than the actual needs for some persons.

A study based on the food practices of populations should not be used as a sole criterion for judging the state of nutrition. It does, however, provide information on food patterns which do influence the nutritional status and hence the public health of the people.

Inasmuch as the mean values obtained are probably quite accurate representations of food intakes and the error in subsequent surveys should be in the same direction and of the same magnitude as those in this study, such surveys of food records or interviews should be of considerable value as measures of changing food habits as affected by prices, income levels, food availability, and health education programs.

The mean protein intake of 4881 fourth grade pupils in this study was found to be 75 gm. with a standard deviation of ±17.9. Youmans (6), studying a rural population in Tennessee with the use of careful food histories for seven consecutive days, reported a mean protein intake of 56 gm. with a standard deviation of ±21.8 for sixty-six children between the ages of seven and nine. Johnston (7), in a study of the adequacy of food eaten by children between the ages of eight and twelve, found that the nine-year-old subjects averaged 86 gm. protein per day. These findings were based upon the weighed amounts of food consumed by eleven children during a two-week period. Macy (8) reported a balance study of a small sample of nine-year-old children; the mean protein intake was 81.6.

In New York City, the mean protein intake for 2302 tenth grade boys was 94 gm. with a standard deviation of ±27.3; for 2360 girls, averages of 76 gm. with a standard deviation of ±18.3 were reported. These may be compared to public high school pupils studied by Wiehl (9) using interview methods. She reported a mean of 100 gm. with a standard deviation of ±24 for 291 fifteen-year-old boys and 79 gm. with a standard deviation of ±19 for 271 fifteen-year-old girls. Youmans found a mean of 83 gm. with a standard deviation of ±29.6 in a sample of twenty-one boys between the ages of

TABLE 9

Comparison of findings of this survey with other investigations

INVESTIGATION	YEAR	AGE OF SUBJECTS	TYPE OF STUDY	NUMBER OF SUBJECTS	PROTEIN INTAKE	
					Mean	Standard deviation
Grade School Pupils						
		yr.			*gm.*	
This study	1947	9.2	3-day dietary record	4881	75	±17.9
Youmans (6)	1943	7–9	7-day dietary interview	66	56	±21.8
Macy (8)	1942	9	metabolic balance studies	2	81.6	
Johnston (7)	1943	9	weighed food intake	11	86	
Adolescent Boys						
This study (New York City)	1947	15.5	3-day dietary record	891	94	±27.3
Wiehl (9)	1940	15	3- to 4-day dietary interview	253	100	±24.0
Adolescent Girls						
This study (New York City)	1947	15.2	3-day dietary record	764	76	±18.3
Wiehl (9)	1940	15	3- to 4-day dietary interview	282	79	±19.3

thirteen and fifteen, and 48 gm. with a standard deviation of ±13.3 for girls of a similar size sample and of the same age group (Table 9).

In the study of students in vocational schools from New York City, we found that 29 per cent of the boys and 54 per cent of the girls failed to meet the protein standard and 2 per cent of the boys and 9 per cent of the girls took less than two-thirds of the recommended amount. In comparing this to Wiehl's (10) study of low-income pupils in New York City, the results were similar. She found that 27 per cent of the boys and 52 per cent of the girls failed to meet the requirement and 2 per cent of the girls and 7 per cent of the boys used less than two-thirds of the recommended amount.

Inasmuch as milk represents the principal source of calcium, the calcium of the milk can be used to estimate approximately the calcium intake. The National Research Council standard for calcium for the nine-year-old child is 1 gm.; for the fifteen-year-old boy, 1.4 gm.; and for the fifteen-year-old girl, 1.3 gm. In this report the mean intake of milk for fourth grade children was 3.6 cups, providing 1.1 gm. calcium. Approximately 70 per cent took three or more cups of milk or roughly 0.8 gm. calcium, so that 86 per cent of the calcium standard came from milk alone. It is safe to surmise that at least 70 per cent of the children received a satisfactory amount of calcium. Johnston (7), in her study of nine-year-old children, found an average intake of 1.6 gm. calcium with 87 per cent coming from milk.

With the adolescent boys in this study, the mean milk intake was approximately 3.5 cups, providing 1.1 gm. calcium; the figure for the tenth grade girls is 2.8 cups, or 0.79 gm. calcium. Sixty-four per cent of the boys and 51 per cent of the girls took three or more cups of milk providing two-thirds of the calcium needs for two-thirds or more of the boys and half of the girls.

A serving of a fruit or vegetable high in ascorbic acid and a serving of a food high in carotene was used by approximately half of the school children. In the fourth grade the high-income groups used the greatest number of servings and in the tenth grade study, the intake was higher among the pupils in academic high schools. Potatoes, bread, and cereals were used more by upstate children than by those in New York City. This may in part account for the higher intake of protein by upstate fourth grade pupils and tenth grade boys. Potatoes, while a low-cost food, were found to be used more frequently by the high-income students and the students in academic high schools than by pupils of the other income levels or vocational schools. This difference in the food practices of pupils in academic and vocational high schools may be due to differences in the income levels.

Table 10 summarizes the percentages of subjects who took recommended amounts of protein, milk, a serving of meat, one or more servings of a fruit or vegetable high in ascorbic acid or carotene, and the percentages that used each of these every day. Since these data were derived from three-day intakes, where high intakes one day would balance low consumption on another day, these data emphasize the scarcity of daily diets which meet the ideal according to modern nutrition. Also, the general superiority of the diet of New York City children as compared with upstate children and of fourth grade children compared to adolescent pupils, especially adolescent girls, is easily seen.

The conclusions derived from many previous surveys which have been most widely quoted and most widely criticized are those relating to the percentage

TABLE 10

Summary showing percentage of students whose average daily food intake met Recommended Dietary Allowances

GROUP	PERCENTAGE OF STUDENTS* MEETING ALLOWANCES					
	Protein	Milk	1 serving or more daily of meat	1 serving or more daily of fruit or vegetable high in ascorbic acid	1 serving or more daily of fruit or vegetable high in carotene	Composite recommended diet
Fourth Grade Pupils						
Entire state	74	68	60	50	48	22
New York City	69	71	60	60	55	28
Low-income	66	62	60	55	53	24
Medium-income	68	72	50	50	43	18
High-income	74	78	70	72	68	40
Upstate New York	76	67	59	45	44	19
Tenth Grade Boys						
Entire state	59	39	85	45	53	21
New York City	60	40	87	45	62	25
Academic high school	63	42	91	57	76	32
Vocational high school	57	38	85	33	52	18
Upstate New York	57	39	83	45	48	19
Tenth Grade Girls						
Entire state	37	22	76	46	58	12
New York City	39	24	78	49	64	15
Academic high school	47	30	87	54	71	19
Vocational high school	33	20	70	43	57	12
Upstate New York	36	20	76	45	55	10

* For number of students see Tables 2 and 3.

of the group suffering from malnutrition. Such conclusions depend principally upon the standards adopted and, as stated previously, we do not believe that consumption below National Research Council Allowances is necessarily indicative of poor health. Also, it is realized that some of the poor dietary records obtained in this survey, as in all surveys, are due simply to errors. Similarly, an assessment based upon physical signs may be interpreted so variably by different investigators as to leave doubt as to their relation to nutritional status. On the other hand, as a measure of the overall situation of the various groups tested, where recording errors should be comparable, we believe the data to be valuable. They agree reasonably well with figures obtained from other surveys of the same general type and follow the trends expected, i.e., the relatively poor dietary habits of the adolescent girl. Furthermore, the data of this study were obtained by methods within the reach of the established agencies of most states and provide information valuable to those responsible for public health.

SUMMARY

Dietary records of fourth grade and tenth grade pupils of the public schools in the State of New York have been analyzed for the amounts of protein, milk, meat, and the number of servings of fruits and vegetables high in ascorbic acid and carotene. Physical appraisals have been conducted on first grade, fourth grade, and tenth grade pupils.

Elementary school children exhibited better food practices than did those of the secondary schools. Adolescent boys made a better selection of food than did adolescent girls. Children from the high-income elementary schools showed greater percentages consuming protective foods than did those of the low- and medium-income schools. Academic schools likewise had a greater proportion of children meeting the standards than did the vocational schools. Children from New York City showed food practices superior to those of upstate New York. Excluding dental defects, approximately 10 per cent of the children showed lesions which were perhaps suggestive of poor nutrition.

REFERENCES

(1) Milam, D. F., and Anderson, R. K.: Nutrition survey of an entire rural county in North Carolina. South. M. J. 37: 597, 1944.

(2) Burke, B. S., Beal, V. A., Kirkwood, S. B., and Stuart, H. C.: Nutrition studies during pregnancy. Am. J. Obst. & Gynec. 46: 38, 1943.

(3) Forty-First Report. Albany: New York State Department of Education, 1945.

(4) Caso, E. K., and Stare, F. J.: Simplified method for calculating diabetic diets. J. A. M. A. 133: 169, 1947.

(5) Food and Nutrition Board: Recommended Dietary Allowances, Revised. National Research Council Reprint and Circ. Series No. 129, October, 1948.

(6) Youmans, J. B., Patton, E. W., Sutton, W. R., Kern, R., and Steinkamp, R.: Surveys of the nutrition of populations. 2. The protein nutrition of a rural population in Middle Tennessee. Am. J. Pub. Health 33: 955, 1943.

(7) Johnston, F. A.: Adequacy of a diet eaten by children eight to eleven years of age. J. Am. Dietet. A. 19: 416, 1943.

(8) Macy, I. G.: Nutrition and Chemical Growth in Childhood. Vol. I. Evaluation. Springfield, Ill.: Charles C. Thomas, 1942.

(9) Wiehl, D. G., and Berry, K.: Medical evaluation of nutritional status. 16. Essential nutrients in diets of high school students according to sex and age and for different cultural groups in New York City. Milbank Mem. Fund Quart. 23: 353, 1945.

(10 Wiehl, D. G.: Medical evaluation of nutritional status. 7. Diets of high school students of low-income families in New York City. Milbank Mem. Fund Quart. 20: 61, 1942.

Training of Supervisors[1]

A Prerequisite for Good Food Service

CLARA E. CHILDRESS

Chief, Education Section, Dietetic Division, Veterans Administration, Washington, D. C.

IDEAL hospital food service is the result of careful planning, preparation, and service of an adequate diet bearing such appeal that consumption by the patient is assured. In order that this may be accomplished with the highest degree of efficiency, training of all participants is necessary.

The dietitian is charged with the responsibility of rendering a complete and effective food service and of handling all the concomitant factors necessary for the administration and control of this service. Next in importance to the selection of the dietitian as the administrator of the hospital food service is the selection of good supervisors to work under her direction. Delegation of routine duties and responsibilities to these first line supervisors is one answer to the shortage of professional personnel in the dietetic field. In addition, assignment of supervisory duties is a way of giving recognition to employees who demonstrate ability and willingness to accept more responsibilities.

Training of employees for such duties is most important if the dietitian is to provide good food service for the institution. The assumption of the responsibility for planning and executing a supervisory training program may, at first, appear to the dietitian to be a tremendous burden. Actually, the benefits of such a project will mean relief from many of the routine supervisory responsibilities which she must otherwise carry. It will strengthen the subordinate levels of supervision, thus making it possible for her to perform the executive and administrative functions of a smoothly running food service.

The first requirement in planning such a program is a careful definition of authority for each level of supervisory responsibility. This step will eliminate overlapping and conflicting authority.

In this paper, the division of authority and responsibility as it is handled in the Dietetic Service of Veterans Administration Hospitals will be discussed. In general, we believe that it is a pattern which could be adapted to dietary departments in other institutions in accordance with their needs.

Before discussing the training of supervisors, answers to certain questions seem necessary for complete understanding:

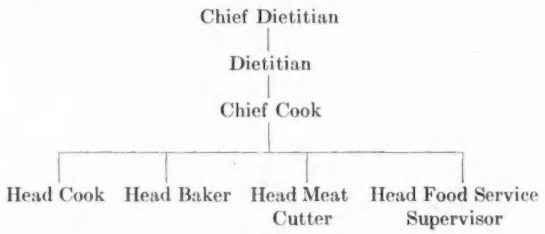
(a) What is a supervisor?
(b) Who are supervisors?
(c) What are their supervisory responsibilities?
(d) What are the relationships of the various units of a dietetic department?

WHAT IS A SUPERVISOR?

The term "supervisor" may be defined as one who is responsible for the working conduct of, and the quality and quantity of work produced by subordinates. This responsibility may be a part-time or a full-time one. Supervisors are concerned with relationships of employees and the immediate responsibility for production. A supervisor trains, explains rules and regulations, inspects work, rates employees, and so on. The efficient operation of a food service department is dependent in large measure on the success of these supervisors in obtaining a high degree of cooperation from their helpers.

WHO ARE SUPERVISORS?

Who are first- and second-line supervisors in a hospital food service department? Titles for these jobs vary with the organization or institution. In the Veterans Administration, these supervisors are called: Chief Cook, Head Cook, Head Baker, Head Meat Cutter, and Head Food Service Supervisor. The line of supervision and delegation of authority may be illustrated as follows:



[1] Published with the permission of the Chief Medical Director, Department of Medicine and surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.

WHAT ARE SUPERVISORS' RESPONSIBILITIES?

The Chief Cook is responsible for the coordination of activities in food production and distribution. He supervises all sections involved in receiving and preparing food and delegates, in turn, responsibility for individual units as indicated. It will not be possible here to include a detailed job description for each of these employees, nor to list all supervisory functions. In order to give an overall picture, some of the main points which indicate supervisory responsibilities are listed for each position.

Chief Cook

Responsible for:

(a) Preparing, cooking, and distributing all food in accordance with approved menus.

(b) Requisitioning and storing correct amounts of food supplies for daily use.

(c) Participating in weekly menu conference. Conferring daily with cooks, bakers, meat cutters, and food service supervisors in use of standardized recipes, portion control, and proper cookery methods.

(d) Orienting new personnel assigned to duty, discussing departmental procedures, food handling, sanitation, and personal hygiene. Participating in training program for all dietetic personnel.

(e) Scheduling employees for duty; counseling personnel supervised as to standard job performance.

(f) Maintaining sanitation through proper housekeeping procedures.

(g) Maintaining property records.

Head Cook

Responsible for and engages in:

(a) Preparation of one or more meals daily, coordinating all activities in a unit in the preparation of items on schedule and in proper sequence.

(b) Sanitation in assigned unit, daily inspection of refrigerators and stores, economical use of all foodstuffs.

(c) Efficient operation and maintenance of all equipment used.

(d) Orientation of personnel assigned to unit; on-the-job instruction of cooks and food service workers.

Head Baker

Responsible for:

(a) Production on schedule of all bakery products for regular and modified diets, prevention of waste through use of standardized recipes, and application of knowledge in regard to accepted procedures.

(b) Apportionment of all bakery items for delivery to serving units.

(c) Requisitioning of daily supplies for bakery.

(d) Care of equipment and sanitation in the unit.

(e) Direction of all personnel assigned to the bakery unit; orientation of new employees; on-the-job instruction of workers.

Head Meat Cutter

Responsible for:

(a) Processing of all carcass meats, meat products, and fats in the most economical manner and in accordance with standards in Veterans Administration Manual.

(b) Receiving, inspecting, weighing, and storing all meat, meat products, fish, fowl, cheese, and cooking fats.

(c) Apportioning and issuing these items to all units as requisitioned. Maintaining inventory of all supplies under his jurisdiction.

(d) Scheduling work and budgeting time to provide for use of meat within 12 hr. of processing.

(e) Sanitation of unit and care of equipment.

(f) Participating in formal and on-the-job training of workers and helpers in meat processing, fat rendering, and carving.

Food Service Supervisor

Responsible for:

(a) Direct supervision of the activities of food service in dining rooms, cafeterias, and tray serving units.

(b) Directing the loading and distribution of hot and cold food conveyors.

(c) Preparing time and duty schedules for workers to meet work load as required by daily menu and emergencies.

(d) Assigning workers to specific tasks; on-the-job instruction in procedures; participating in instruction in sanitation and personal hygiene.

(e) Requisitioning, receiving, and issuing linen and expendable supplies used in the Dietetic Service.

(f) Making scheduled physical inventory of all property and preparing requisitions for repair of equipment.

RELATIONSHIPS OF THE VARIOUS UNITS

The number of positions needed for efficient service is determined and the work load of the Dietetic Service divided into units; detailed duties for each position are worked out and a "charge person" (supervisor) appointed for each unit. Division into units makes delegation of supervisory responsibilities possible. The dietitian gives necessary instruction and training to supervisors and holds them responsible for satisfactory preparation and service of food. The coordination of the units so that activities in each advance to meet meal hours simultaneously is delegated to the Chief Cook.

Responsibilities of individual units are clearly defined. Related units may be adjacent to each other, but are complete within themselves. For example, meat and vegetable preparation units located in the area of the receiving platform make it possible for carcass meats to be moved over a shorter meat track from the platform to the refrigerator and for vege-

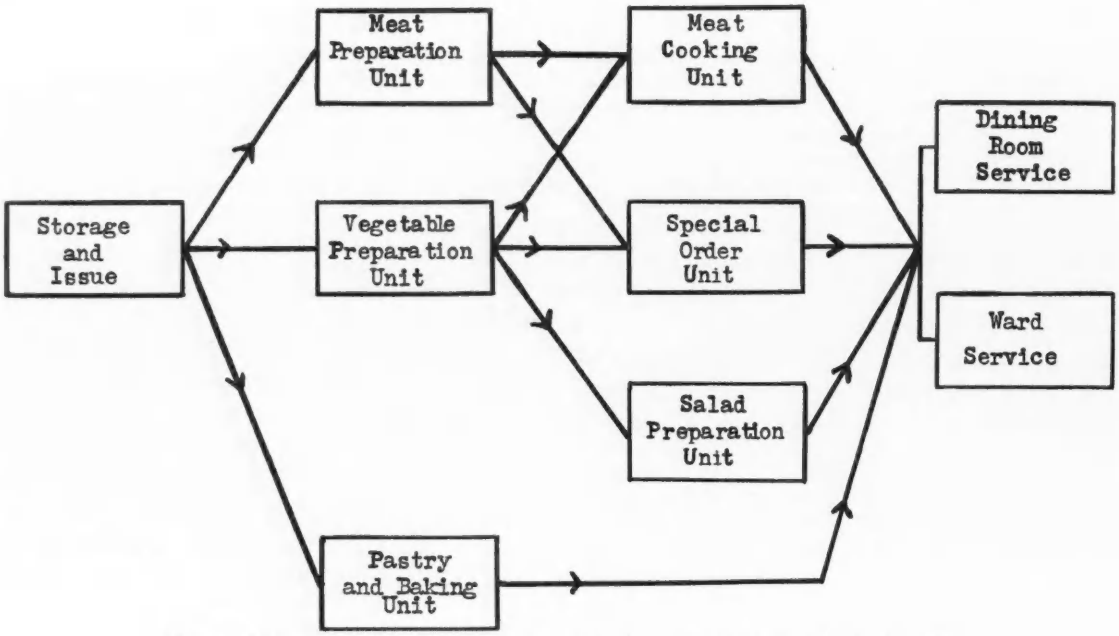


Fig. 1. *Diagram showing units and the part each plays in production of the day's meals.*

table trimmings to be transported only a short distance to the food waste refrigerator. Processing of all meats, vegetables, and fruits in readiness for cooking or serving is completed in these units before delivery of the items to the kitchen area. Each unit is furnished daily with a complete written order expressed in weight, measure, or number of servings. In the case of the Bakery, Salad, Special Order, and Main Cooking Units, standardized recipes are also given with the daily order.

Meat Preparation Unit

This unit performs all steps in the processing of meats, meat products, fish, poultry, and cheese for serving and cooking. It is the responsibility of the dietitian to determine the cuts she desires and to instruct the Head Meat Cutter, who is in turn responsible for supervision of the unit, so that meats are processed to the best advantage when cutting for roasts, steaks, or stews; grinding for loaves or hamburgers; stripping, and panning bacon for delivery to the cooking unit.

Vegetable Preparation Unit

In order that fruits and vegetables may be handled as little as possible, all preliminary steps in the preparation for cooking, serving, or salad making, such as sorting, washing, peeling, cutting, shredding, and so on are performed in this unit.

Bakery Unit

This unit prepares all rolls, hot breads, pastries, cakes, and other desserts, including puddings, ice creams, gelatins, stewed fruits, and sweet sauces. To eliminate re-handling, bakery items are apportioned for serving in this unit.

Salad Preparation Unit

All salads and salad dressings, including those for special orders, are prepared in this unit. This provides for better control, uniformity, and for closer supervision.

Special Order Unit

All special items not available from other units are prepared in this unit which is an auxiliary of the Main Cooking Unit and not an isolated small kitchen. The Special Order Unit also prepares between-meal nourishments.

Main Cooking Unit

This unit is responsible for cooking of all foods, using standardized recipes, and following policy of continuous preparation of food in small quantities as needed for service.

TRAINING FOR SUPERVISORS

The philosophy of supervisory training has been aptly defined by a manager of one of the Veterans Administration Hospitals. He says, in part, that "training for supervisors, like a photographer's developing solution, can be correctly mixed and great pains taken to see that it is of proper proportions. Then we can systematically 'dip' our supervisors in the training solution, but the ultimate success will be limited by the quality of the negative. There are

FIG. 2. *Weekly menu conference held by the Chief, Dietetic Service, is attended by members of the dietetic staff, the Chief Cook, Head Baker, Head Meat Cutter, and Head Food Service Supervisor.*

people who could never be made supervisors. Unless the individual has the potentialities for growth and development, training will not make him a supervisor."

A paramount responsibility of management is to make sure that employees selected to fill supervisory positions possess the basic capacity for supervision. They are often chosen for technical performance rather than their ability to lead and direct people. The lack of ability to enlist the full cooperation of workers in getting the job done is more often the cause of failure in supervision than is the lack of technical knowledge.

The next step after selection is the administration of supervisory training. This must be closely coordinated with top supervision. Experts may administer various phases of the program to better equip the supervisor to discharge his supervisory responsibility, but successful training is directly dependent upon his immediate superior. A major part of supervisory training must be informal, on-the-job, and conducted by the immediate superior.

Plan of Training

Under the general plan of training dietetic employees in the Veterans Administration Hospitals, each station carries out a program of on-the-job instruction for all food service workers. In addition, refresher training courses for special groups, such as cooks, bakers, meat cutters, and food service supervisors, are held at hospitals designated for this purpose.

The aim of this training is to bring the worker to the point where he can perform efficiently, safely, and in a minimum of time all of the steps involved in the work to which he is assigned. For food service workers this includes training in food handling, food service, sanitation, housekeeping, and so on. First line supervisors are responsible, as indicated in the duties listed above, for on-the-job instruction in the individual units of operation. They are given training in instruction methods, in making job breakdowns, and in responsibility of supervisors in working relationships. The Dietetic Service of the Veterans Administration is fortunate to have the assistance and cooperation of the Personnel Service in this phase of training programs.

On-the-job training of the employees is accomplished in part through a scheduled rotation by the supervisor of food service workers in a variety of jobs. Rotation of employees from one job to another has many advantages other than being merely an adjunct of on-the-job training. It is also the key to the straight shift for dietetic employees, making possible better utilization of manpower. We feel that it has the following favorable points: Every food service worker is trained for every job. Work does not become monotonous; there is variety. A tedious job is only a short-time assignment. Employees who are required to do a variety of tasks are usually a more interested group. The employee has a chance to demonstrate ability to take more responsibility.

As further training for supervisors, the Chief of the Dietetic Service is encouraged to make full use of conferences for professional and nonprofessional staff members. Such meetings offer invaluable opportunity

for group participation and discussion, for developing supervisory leadership, for the definition of policy, and for maintaining standards in procedure throughout widespread units.

Course in Leadership

The Personnel Service of the Veterans Administration offers a course in "Leadership" as a follow-through on the training in job relations given to all supervisory employees. This is a course specifically designed to increase the skill of Veterans Administration supervisors in managing people. At the present time this course has not reached the lower levels of supervision, and it is not contemplated that all first line supervisors will attend. Selection will be made of those who, in the opinion of their superiors, can benefit from discussions of supervisory responsibilities for maintaining communication between management and employees, obtaining willing cooperation from employees, maintaining discipline, orienting new employees to their jobs, settling grievances, and related problems.

Refresher Courses

To augment the training given at individual stations, refresher courses for specialized groups are held at designated hospitals. These are intensive courses of short duration for cooks, meat cutters, bakers, and food service supervisors which are intended to:

(a) Provide additional training in the particular work of the group, i.e., cook or baker.

(b) Emphasize supervisory and training responsibilities of first line supervisors.

(c) Increase the efficiency of food service to patients through standardization of procedures, elimination of loss of time and motion in performance, and maximum utilization of manhours.

Refresher training was begun as an expedient for meeting the needs of the rapidly expanding Dietetic Service of the Veterans Administration. These courses, lasting from two to six weeks, were designed at the outset as a means of standardization of procedure throughout Veterans Administration Hospitals. They were not planned to train cooks, bakers, or meat cutters as such, but to offer re-training in procedures and to present new ideas and methods.

Various experiences in the past two years have resulted in more emphasis being given to training in supervisory duties and responsibilities. In addition to on-the-job experiences, lectures and discussion are included to provide information applicable to the particular group. The courses are divided into two main phases: supervised on-the-job training for the morning session with classes, and informal discussion and exchange of ideas during the afternoon. Demonstrations, tests and studies of various kinds are included, and the results are analyzed and discussed for the purpose of showing effects of correct and incorrect methods, thereby stimulating the use of proper techniques.

Training has become one of the essential activities of the Dietetic Service. It has proved to be an unexpected stimulus to enthusiasm for the job and a boost to morale. Some results are apparent in improvement in food production and service and in better utilization of time and materials. The response to this training is a clear indication that an effective program pays dividends in efficiency and successful performance.

Effect of Breakfast Habits on Physiologic Response

At the State University of Iowa, an investigation was made to determine the effect of breakfast habits on work output, mental alertness, and muscular fatigue. A group of six healthy, normal women ranging from twenty-two to twenty-seven years of age served as subjects.

During the first weeks of the study, the subjects ate a "heavy," 800-calorie breakfast, consisting of fruit, cereal and cream, one egg, one slice bacon, two slices toast with jam, milk, and coffee if desired. After becoming accustomed to this breakfast, tests were made to determine maximum work output, reaction time, and neuromuscular tremor.

Then the subjects were successively put on regimens of several weeks each during which they ate no breakfast, drank only a cup of coffee with cream but no sugar, and finally ate a 400-calorie breakfast consisting of fruit, one slice toast, butter, milk, and coffee if desired. The same tests were made after the subjects had become accustomed to each regimen.

The results of the tests indicated that the omission of breakfast caused a decrease in maximum work output, an increase in both simple and choice reaction time, and an increase in tremor magnitude. When coffee alone was substituted for a heavy breakfast, there was a decrease in the level of performance in all three areas.

When a light breakfast was given (following the period when only coffee alone was taken in the morning), significant improvement was noted in maximum work output and choice reaction time, and there was a decrease in tremor magnitude.—*Abstracted from "Effect of Altered Breakfast Habits on Physiologic Response" by W. W. Tuttle, Marjorie Wilson, and Kate Daum, Journal of Applied Physiology 1: 545, 1949.*

Significance of Feeding from the Viewpoint of Child Development[1]

JAMES L. HYMES, JR., Ed.D.

Professor of Education, State Teachers College, New Paltz, New York

BASIC to this discussion are two assumptions of child development: the first is that learning begins at birth; that there is no one golden time of six years or five or three when children first begin to "think" or "learn" but that experiencing, reacting, organizing, feeling, and thinking go on continuously from the very first moment of life. The second assumption is that this continuous process pervades all of life, that is, it goes on through the little things of everyday doing as well as through the big major and obvious events which we all can spot as "learning times."

IMPORTANCE OF FEEDING TO INFANTS

Seen from the vantage point of these two assumptions, it is clear that feeding *does* have great significance. Look briefly at what feeding represents to the infant and young child:

(a) Feeding is the avenue through which the child has his first experiences with humans. It is the basis on which are built all later attitudes in human relationships. Do people give him *what* he wants and needs *when* he wants and needs it *in the way* he wants and needs it?

These are not conscious questions in the infant's mind, but they are nonetheless real. Through his feeding experiences answers come, and these answers lay down the first basis for deciding such questions as: is this a friendly, supporting, comfortable world? *Or*, is this a holding-out world, a tough world where I must fight? As I live with people from this point on, do I need to feel hostility and suspicion, or can I afford to feel trust?

(b) Feeding is the avenue through which the child has his first experiences with discipline, with the rules of his world, with the objective external things of life and with the demands which living will make on him. Through the schedule that is decided on (or the lack of an imposed schedule), through the way in which the dropping out of feedings is handled, and through the way in which new foods are introduced, a basis is built up which can determine action and attitude in many a situation far removed from feeding and far removed from infancy. Again, unconsciously, the child is discovering: can I do what is expected of me easily and comfortably? Can I take adjustments in my stride? *Or*, to protect myself, must I fight against each demand that life imposes?

The answers go far to determine your feeling toward the world in which you are living: is this a comfortable world? *Or*, is it one that is overdemanding?

(c) Feeding also is the avenue through which the child is learning about himself. In infancy, along with feeding, can come loving and talking and leisure and enjoyment. *Or*, in infancy, there can also be rush, impersonality, tenseness, and scarcity. Through early feeding, then, the child is beginning to learn answers to questions such as these: am I wanted, accepted, loved? He can come out with that exciting discovery: I am good. Or, he can come through early feeding with the opposite feeling. In later infancy and early childhood, the same process of discovery continues. I am able . . . I can do . . . I am growing up and I am glad about it . . . I have a confident adequate feeling. *Or*, this next step is always hard. . . . The world asks too much of me . . . I am not good.

IMPORTANCE OF INFANT FEEDING TO PARENTS

At the risk of spending too much time on infant feeding, it is still worth while to look briefly at a fourth significance. Feeding represents to the young child his first learning about his world and the people in it, its rules, and about himself in that world. But just as patterns are laid down inside of the child in these crucial areas, so too does feeding represent a prime learning time for parents. For them, feeding represents their first lessons in how they will feel and act toward their child—in particular, two lessons: one, do we accept him as an individual? Do we accept him as he is? Can we learn to go along with his particular demands and capacities and rate? And, two, do we see ourselves as "giving in" to this child? Will we make the effort to accede to his reasonable requests? *Or*, from the beginning, will we bend him and his nature to suit our convenience

[1] Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 22, 1948.

or rules or schedules? Will we be glad that we can give? *Or,* will we be angry that we must?

BENEFITS OF KNOWLEDGE OF CHILD DEVELOPMENT

This very brief summary of feeding at just one age may be enough to indicate a truth that will hold with feeding at all ages: you never feed food alone—you always also feed attitudes. Feeding has that significance and must, therefore, never be seen as an isolated, single-minded act. Food comes into the child, yes. But that food is a vehicle for feelings that may be even more determining of later action than good nutrition.

What, then, does child development say about infancy and about later ages that will insure the building of good attitudes along with good nutrition? We cannot go into detail about all of the human understandings that have come from psychiatry and sociology, pediatrics, anthropology, psychology, and education—that amalgam of disciplines from which child development as a science draws its content. But, does this mean that child development can offer you nothing in the way of specifics?

The answer can be quite the opposite. Child development is a science. But child development is also living. You, a living person, one human with other humans—*you* are involved in child development. Certain lessons about people have come most clearly out of research, but certain other very important lessons have come out of humans understanding themselves and out of humans understanding the people who live around them. If you can learn to use this resource—you, your life, your friends—you can draw on understandings that will stand you in good stead in your work of feeding children. Your tool for the study of child development becomes not only a course or a book or a library, but your own sensitivity and insight into what people ask from life, what people are like, what pleases people, and what makes them feel good.

FUNDAMENTALS OF HUMAN NATURE

The crux to this approach to child development is you. I can start your thinking, however, if only to indicate some of the really foundational understandings about human nature which we all hold and have taken simply from our daily living. If, through this paper, we can raise a few of them to consciousness, we can see the process by which you can illuminate your feeding of children with good sensitivity:

(a) As we look at ourselves, for example, one big fact stands out: *we are each different*—different hats, different dresses, different sizes, different coloring, and different weights. We come from different jobs. We listen and we read with differing interests. We know—you know and I know—that after reading this paper each one will have different reactions and feelings and degrees of stimulation. The thing we must *comprehend* is: this overwhelming fact of differences is not true of us alone. This is true of people, true of children, true of those we feed. If we can take this, as an example, as one guidepost for our future dealings with children we can be that much more sure that our feeding will build good attitudes.

(b) Or again, just as we look at ourselves, this too we know: *people have feelings.* On a trip you may be lonely, you may be afraid, you may be angry, you may feel gay and confident. There is a feeling side to life, and you know it because you have experienced it. And you know that it affects what you do. You felt embarrassed when you spoke at a meeting, and you didn't say your piece as well as you could have. You were angry when you met those important people, and you didn't make as good an impression as you might have. You were frightened when you were caught in the traffic, and you didn't act as wisely as you could have. We see it all the time in our own living, but this is what we must now know: children have feelings, too. Good comfortable feelings improve action; harassing feelings pull action down. Keep this in mind as a guidepost, and again what you do in feeding children will be that much more sure to build good attitudes.

(c) Or, once again, just to illustrate the process: you know *that behavior is caused.* Why are you restless as you read this? You may be hungry; maybe you stayed up too late last night; the seat is too hard; or you are thinking about work piling up on your desk. Just to say you are restless is no help; there is some reason why. Why did you speak too sharply to your colleague on the job? You were tired; you were hurt; you were afraid—was it something unrelated that happened at home?

No one can list the possible causes. There is no need to do so. But the fact stands out—behavior does not just happen "out of the blue." It is caused; there is a reason on which you can put your finger if you look hard enough. Once you know this, you get much less upset. You want to understand instead of punish. You want to help instead of label. You want to get to causes instead of staying on top with blame. Behavior is caused—children's behavior as well as adults'. Knowing this can help you feed youngsters in such a way as to build good attitudes.

This is not the whole of child development. But it may be enough to make one point clear. You have a resource right at hand which can help you to use child development to lend a human quality to your work. Alone it may not be enough; wihout some study, some reading, some participation in conferences it may not give the whole picture. But to infuse what you do with insights on child development need not wait upon a long and organized program of training. A child development resource is right at hand; it is you—your insight into yourself and into people. Dig down into your living to raise up to consciousness those things that people and children want out of life.

Editorial

M. FAITH MCAULEY MEMORIAL FUND

Never, except during the war, has there been a greater need for capable executive dietitians than at present and a greater challenge to their ability as business women, nor have there been greater opportunities to exercise that ability and greater rewards, both financially and professionally.

Those in the placement field are besieged by requests for managing dietitians, ranging from the position of diet kitchen dietitian or sole dietitian in a small hospital to that of executive of an important department in a large hospital. The field has been developed, the positions are open, and we must redouble our efforts to obtain students of high caliber and to train them to become capable executives.

Since the early days of dietetics all those interested in its progress have worked hard to make a place in the hospital for the dietitian, not as a subsidiary worker in some larger department but as an entity in her own right, who gathered together all the various functions relating to food, organized them into one department, and served as the executive of that department.

Much has happened since the war years to improve the lot of the hospital dietitian. Split shifts have given way to straight hours; new labor-saving equipment, higher salaries, and better hours have made it easier to obtain adequate numbers of employees of a better caliber. The emphasis on personnel training and the development of better methods in training workers has added interest for both the dietitian and the employee, resulting in better cooperation and happier working conditions. The salaries paid to dietitians with the ability to organize and manage an efficient department have improved greatly and will increase in direct proportion to the amount of responsibility which one can successfully carry.

The best dietitians are those who appreciate good food and inspire their workers with pride in creating attractive products. We need to develop in our profession a great respect for the preparation of high quality food. Many artists, actresses, and even business men are proud of their proficiency as cooks and make it a great social asset. In our teaching in both colleges and dietetic internships, we should emphasize the dignity of work and the importance of the basic skills.

Most college graduates going into dietetics think that they would like to do "scientific" work—meaning special diets, work with doctors, and contact work with patients. That is the glamour side of hospital dietetics. We need to show them also that administration is just as scientific; that management principles applied to big business can be equally well applied in organization and management of a dietary department; that the planning of a layout and the selection and proper placement of equipment can be an absorbing and exciting project; and that the development and management of a department is a feat of which any woman may be proud and which will give her a feeling of accomplishment.

Are we so immersed in counting calories and writing special diets that we lose sight of the fact that serving good quality food to all patients takes care of many of these problems? Do we have an accounting system which enables us to determine where our costs are, and which gives us control; or do we still wait in fear and trembling for the report from the hospital office two weeks after our food has been served? Can we show our superintendents what our food costs are, why our expenses are high, what equipment and personnel we need to run an efficient department—in short are we acting as managers of our departments?

In training our hospital dietitians, are we making them aware of management problems and how to use management principles in solving them? Are we teaching them to use the principles of psychology and education in contacts with patients and personnel? Are we giving them opportunities to work out these problems so they may have the satisfaction of accomplishment and the confidence to meet and solve problems independently? Are we encouraging those who show a talent for management to go into administration and prepare themselves to assume larger responsibilities?

Recognizing this need for advanced training in the administrative field, a project was undertaken by the Illinois Dietetic Association to give tangible assistance to qualified students by establishing a loan fund for graduate study. The fund will be administered by the American Dietetic Association and will, therefore, operate on a national basis.

This project was inspired by the work of M. Faith McAuley, one of the great teachers of food administration, and the fund will be called the "M. Faith McAuley Memorial Fund." Her vision of the scope of the field, her ability to dignify work which to many

seemed routine, and her scientific approach to its problems were an inspiration to all who had contact with her.

The fund now totals approximately $1000. This will enable us to use it as a loan fund. However, if the fund could be materially increased, so that the interest would be sufficient to give an award each year to an outstanding student, such an award might be more useful than if the fund served purely as a loan fund. Contributions from those who wish to assist graduates in the field of administration can still be made to this fund. They should be specified for the M. Faith McAuley Memorial Fund.

Because of the expense involved, it has not been possible to thank individually all those who have already contributed. The Executive Board of the Illinois Dietetic Association and the Fund Committee hereby express appreciation to those who have supported this project.—*Ella Marie Eck, Director of Dietetics, University of Chicago Clinics.*

REPORT OF THE NOMINATING COMMITTEE, AMERICAN DIETETIC ASSOCIATION, 1948–49

The Nominating Committee of the American Dietetic Association—Margaret Cowden Bernard, Marion D. Floyd, Margaret E. Terrell, Marjorie Wood, and Helen A. Hunscher, Chairman—presents the following ballot for 1949–50:

President-Elect

Lillian Storms Coover: B.S., Iowa State College, Ames; M.S., Teachers College, Columbia University, New York City; Ph.D., Columbia University

Positions held:
- Instructor, Department of Chemistry, Iowa State College, Ames
- Assistant Professor, Home Science Department, University of Otago, Dunedin, New Zealand
- Nutritionist in Charge of Research, Gerber Products Company, Fremont, Michigan
- Present position: home maker and Nutrition Consultant, Gerber Products Company

Professional activities:
- Vice-President, A.D.A.
- Secretary and Chairman, Membership Committee, A.D.A.
- Chairman, Community Education Section, A.D.A.
- Chairman, Nominating Committee, A.D.A.
- Delegate, A.D.A.
- Member: Investigation Board, A.D.A.
- Member: Membership; Constitution Revision; and Reorganization and Constitution Committees, A.D.A.
- President, Michigan Dietetic Association
- Treasurer, Michigan Dietetic Association
- Member: Sigma Xi, Iota Sigma Pi, and Sigma Delta Epsilon

Publications:
- Four papers in this and other scientific and professional journals

Vice-President

Adelia M. Beeuwkes: B.S., Michigan State College, East Lansing; M.S., University of Michigan, Ann Arbor

Positions held:
- Therapeutic Dietitian, University Hospital, Ann Arbor
- Therapeutic Dietitian, New York Hospital, New York City
- Therapeutic Dietitian, Presbyterian Hospital, New York City
- Nutritionist, University Health Service, Ann Arbor
- Instructor in Nutrition, Division of Hygiene and Public Health, University of Michigan, Ann Arbor
- Instructor in Dietetics, University of Michigan Medical School, Ann Arbor
- Present position: Assistant Professor of Public Health Nutrition, University of Michigan School of Public Health, Ann Arbor

Professional activities:
- Chairman, Community Nutrition Section, A.D.A.
- President, Michigan Dietetic Association
- President, Ann Arbor Dietetic Association
- Member: National Advisory Board on Health Services, American Red Cross (Committee on Nutrition)

Publications:
- Articles in this and other professional journals

Fern W. Gleiser: B.S., University of Washington, Seattle; M.S., Teachers College, Columbia University, New York City

Positions held:
- Assistant Manager of Commons, University of Washington, Seattle
- Assistant Director of Residence Halls and Manager of Tea Room, Oregon State College, Corvallis
- Instructor in Institution Administration, Teachers College, Columbia University, New York City
- Assistant Professor of Institution Administration, Drexel Institute, Philadelphia
- Professor and Head, Department of Institution Management, Iowa State College, Ames
- Present position: Professor of Institution Economics and Management, University of Chicago.

Professional activities:
- Treasurer and Chairman, Finance Committee, A.D.A.
- Member: Finance, Nominating, Administrative Approval Committees and special Committee on Socio-Economic Status of the Dietitian, A.D.A.
- Delegate, A.D.A.
- President, Iowa Dietetic Association
- Vice-President, Illinois Dietetic Association
- Member, Omicron Nu and Phi Upsilon Omicron

Publications:
- Articles in this and other professional journals

Treasurer

Winifred Howard Erickson: Diploma, The Stout Institute, Menomonie, Wisconsin; B.S., University of Minnesota, Minneapolis

Positions held:
- Head Dietitian, Eitel Hospital, Minneapolis
- Chief Dietitian, Veterans Hospital, St. Paul
- Instructor, College of St. Catherine, St. Paul
- Present position: Director of Dietetics, Ancker Hospital, St. Paul

Professional activities:
- Member, Finance Committee, A.D.A.
- Delegate, A.D.A.
- President, Minnesota Dietetic Association
- Chairman, Food Administration Section, Minnesota Dietetic Association
- Chairman, Constitution Committee, Minnesota Dietetic Association
- President, Minnesota State Nutrition Council
- Member: Minnesota Home Economics Association Council

Publications:
- Articles in hospital business publications

Wilma F. Robinson: B.S., University of Kentucky, Lexington
Positions held:
Therapeutic Dietitian and Chief Dietitian, Christ Hospital, Cincinnati
Chief Dietitian, Mt. Auburn Hospital, Cambridge, Massachusetts
Present position: Consultant Dietitian, Division of Hospital Construction and Services, Department of Public Health, Springfield, Illinois
Professional activities:
Delegate, A.D.A.
Member: Approval Committee, A.D.A.
Chairman, A.D.A. Community Nutrition Section Committee on How Assistance Is Actually Being Given in Various States Without Trained Personnel
President, Ohio Dietetic Association
Vice-President, Ohio Dietetic Association
President, Cincinnati Dietetic Association
Chairman, Professional Education Section, Massachusetts Dietetic Association
Chairman, Community Nutrition Section, Illinois Dietetic Association

Nominating Committee

The following candidates (five of whom are to be elected) for the Nominating Committee for 1949–50 have been selected as representatives of special fields of interest in the profession:

Helen Hawver Anderson: B.S., James Millikin University, Decatur, Illinois. Present position: Director of Dietetics, Stanford University Hospitals, San Francisco.

Mary I. Barber: B.S. and graduate study, Teachers College, Columbia University, New York City. Recently retired as Director of Home Economics, Kellogg Company, Battle Creek, Michigan. Past-President, American Dietetic Association.

Clarice Gullickson: B.S., North Dakota State College, Fargo. Present position: Chief, Administration Section, Dietetic Division, Veterans Administration, Washington, D. C.

Beulah Hunzicker: B.S., M.S., University of Wisconsin, Madison. Present position: Director of Dietetics, Presbyterian Hospital, Chicago.

Elva James Kahrs: B.S., Louisiana Polytechnic Institute, Ruston. Until May 1, 1949, Chief Dietitian, Touro Infirmary, New Orleans; present occupation, home maker.

Martha Nelson Lewis: B.S., The Ohio State University, Columbus; M.S., State University of Iowa, Iowa City. Present position: Director, Dietary Department, The Ohio State University Hospital, Columbus.

Doris T. Odle: B.S., Purdue University, Lafayette, Indiana; M.S., Kansas State College, Manhattan. Present position: Chief Dietitian, Colorado General Hospital, Denver.

Lucille M. Refshauge: B.S., University of Nebraska, Lincoln; M.S., Teachers College, Columbia University, New York City. Present position: Director of Dietetics, Hartford Hospital, Hartford, Connecticut.

E. Neige Todhunter: M.S., University of New Zealand; Ph.D., Columbia University, New York City. Present position: Head, Department of Foods and Nutrition, University of Alabama, Tuscaloosa.

Delegate-at-Large

One of the following candidates is to be elected to represent membership in Wyoming, Nevada, and South Dakota, where there are no affiliated state dietetic associations:

LaVerna Steadman Hansen: Ed.B., University of California, Los Angeles. Present position: Consulting Dietitian, Cody Hospital, Cody, Wyoming.

Alice B. Marsh: B.S., Oregon State College, Corvallis; M.S., Kansas State College, Manhattan; M.A., Ohio University, Athens. Present position: Assistant Professor of Home Economics, Foods, Nutrition, and Institution Management, University of Nevada, Reno.

Colorful Colorado

Denver, named for James W. Denver, Governor of Kansas Territory, became the center of activity in Colorado when gold was discovered there and in Idaho Springs and Central City in 1858–59. Later, it became the state capital and today has a population of 325,000 and an area of 66 sq. mi.

Surrounding Denver are some of the nation's famous vacation spots and most majestic scenery. On the outskirts, to the west, is Red Rocks Park, which contains several hundred acres of huge formations of red rocks, including caves, ledges, and winding trails, as well as a natural outdoor theater which seats 10,000 and is provided by nature with acoustics which make it a new wonder of the world. A little further to the west is Lookout Mountain, on the summit of which is the grave of Buffalo Bill Cody, the famous Indian scout and master showman. The highway to the top of Lookout Mountain, known as the Lariat Trail, climbs 2000 ft. in 6 mi.

Also in Colorado, west of Denver, is the world's highest automobile highway which leads to the top of Mount Evans, 14,260 ft. high. Here the University of Denver and the Massachusetts Institute of Technology maintain a laboratory for the study of cosmic rays.

Rocky Mountain National Park, 65 mi. northwest of Denver, has within its boundaries fourteen massive, snow-capped peaks more than 13,000 ft. high. Here can be enjoyed mountains, forests, crystal clear lakes, streams, and glaciers, all of breath-taking beauty.

Some 80 mi. south of Denver is Colorado's famous Pike's Peak. Discovered 143 years ago by Lt. Zebulon Pike, it was not scaled until twenty years later. Today, however, several thousand people each year climb it either by highway, cog road, horseback, burro, or on foot. From the top, nearly three miles above sea level, one can look east to Colorado Springs and Manitou Springs, south to Lake Moraine, and west to Seven Lakes and the historic mining town of Cripple Creek.

The Denver *Post's* slogan, "It's a Privilege to Live in Colorado," expresses well the feeling of Colorado dietitians, and we hope that when you attend the A.D.A. convention this fall, you will see some of scenic Colorado.—*Beth Kelley, Chief Dietitian, Presbyterian Hospital, Denver.*

Current Comment

THE CHILD AND HIS FOOD

LORRAINE WENG[1]

Nutrition Clinic, University of Chicago Clinics

Parents who are faced with the responsibility of feeding the child who "just won't eat," the child who is "picky about his food," and the "dawdler" are often completely baffled as to "what to do to get the child to eat." The frequency with which these complaints are repeated in doctor's offices and clinics has led workers in the field of pediatrics and its allied professions—psychiatry, child development, nutrition, nursing, anthropology, and other related fields to study carefully the factors in this widespread incidence of "feeding problems." Since it is generally agreed that the pattern of eating established during childhood is carried over into adulthood, it becomes doubly important that the child develop a positive attitude toward food and eating.

In order to utilize the material that has been presented on this subject and to determine the dietitian's role, a project was set up in the Diet Therapy Section of the American Dietetic Association to study current child feeding practices in an effort to: (a) evaluate them and their possible contribution to the creation of feeding problems; (b) consider whether the methods or devices employed in feeding children promote an optimum selection of food; and (c) determine to what extent the modern trend in pediatrics of a more liberal plan of feeding based on the individuality of the child has been incorporated into food services. The opinions (both published and unpublished) of various people were used as a basis for formulating questions which made up a questionnaire sent to children's hospitals, convalescent homes for children, hospitals with a large pediatric service, and to the hospitals represented by the state diet therapy section chairmen. The following discussion is presented as a composite of the most significant points brought out in the replies to the questionnaire.

The scientific emphasis of our civilization has been the dominant influence in our thinking of child care. Tremendous advances have been made in the field of child nutrition through scientific research. A knowledge of bacteriology has made it possible to devise sterilization techniques which make artificial feeding a comparatively safe procedure. The incidence of rickets and scurvy has been reduced to such an extent that some medical schools are having difficulty in finding cases for teaching purposes. We know now what foods are important to the growing child and why they are important.

But how have we applied this information to our everyday living and teaching? When breast feeding was the only known and accepted method of feeding babies, the baby was fed when he indicated that he was hungry. Attempts to use artificial methods, however, resulted in the construction of formulas which were often the result of complicated arithmetical processes. Rigid schedules based on the observations of large numbers of infants gave the framework for providing the formulas.

This exactness of infant feeding permeated the feeding of older children, too. Not until Dr. C. A. Aldrich, now Director, Rochester Child Health Institute, instigated the idea that a "baby is a human being" was there a realization that in an effort to "gather specialized statistics, the child as a whole was too often lost in the process" (1). As this idea gained momentum and there was a willingness to recognize "that the child himself has something to contribute to his nutritional program" (1), the current concept of child feeding evolved. The child is thought of today not as an "average" but as a person with his own pattern of development and personality and feeding recommendations are individualized accordingly.

What points are pertinent in establishing groundwork for a plan of feeding which combines scientific information with the less tangible psychologic aspects of the individuality of the child? A review of the literature and unpublished observations based on practical experience in feeding children reveals that certain premises are basic.

[1] This article, together with the following paper, constitutes a report of Project #3, 1947–48, and its continuation, Project #2, 1948–49, of the Diet Therapy Section of the American Dietetic Association, titled "Evaluation of Child Feeding Practices in the Hospital." The chairman wishes to express her appreciation to the members of her committee and to others who have helped with this project: Jeanette V. Hamlin, Dorothea F. Turner, Dr. Miriam E. Lowenberg, Elizabeth Perry, Mary Margaret Shaw, Marguerite Pettee, Eva N. Ylvisaker, Doris Johnson, Helen Walsh, Florence Blake, Barbara Ruby, Carolyn Barrett, and Dr. F. Howell Wright.

Now you can give lagging appetites a lift! This recipe book, "Milk Beverages," gives you 26 ideas for tempting, smooth milk drinks. The blending of chocolate, eggs, fruit or even citrus fruit juices with Pet Milk adds new refreshing flavor to milk beverages. Citrus fruit juices can be used because sterilization by heat changes the nature of the protein so that curdling does not occur.

These beverages are *extra nutritious* because they combine other wholesome foods and Pet Milk which supplies twice the protective substances of whole milk. They are *readily digestible* because in processing Pet Milk, the casein is altered so that softer, finer curds are formed during digestion. And Pet Milk is *economical*, too. It costs less generally than any other form of milk.

Send today for free copy of these milk beverage recipes designed to serve ten. Handy booklet form. Printed on one side of the paper. May be cut to fit a 4x6" file.

Home Economics Department, PET MILK COMPANY
1450-G Arcade Building, St. Louis 1, Missouri

Please send, free of charge, one copy of "Milk Beverages."

I plan meals for_____ (*name of institution*)

I teach nutrition in_____ (*where?*)

*Name*_____ *Title*_____

*Street*_____ *City & State*_____

SELF-SELECTION OF FOOD

First, will normal children, if served a "well balanced" diet, eat sufficiently of that food to meet their nutritional needs? As the proponents of the liberal plan of infant feeding have put it into practical use by allowing the infant some freedom in the spacing of his hours of feeding and amounts of food taken, it has become evident that if a suitable formula is provided, these infants do "automatically" satisfy their needs as demonstrated by gains in length, weight, and general status. The spacing and amounts may be extremely variable for some infants, however (2). Dr. Clara Davis' classic experiments have proved scientifically that this is also true for older infants and children. In these experiments (3) "a large assortment of cooked and raw, uncombined, unseasoned, and unsophisticated foods" was offered to newly weaned infants whose food had been milk, and they were allowed to select what they wanted and to eat it as they were able and wished. No particular order of eating was followed, foods were eaten with fingers as well as utensils, and each meal was not perfectly balanced. Accurate records kept on these children showed that over a period of several meals, their food consumption met the nutritional standards ordinarily recommended. From this evidence, then, it seems safe to assume that a child does possess some ability to control his food intake and will eat adequately if an optimum diet is provided and psychologic factors of feeding are recognized.

WHAT IS FORCING?

Second, what is "forcing" of food and what is its effect on food intake? Since one of the cardinal rules in any discussion of child feeding is "don't force food," the question may seem superfluous; but, on second thought, do we agree as to what constitutes forcing? We would certainly include in this category physical force by which the child is made to eat against his will—holding him down and prying his mouth open, pushing food in, and so on. We may be willing to go a step further and include making the child sit at the table for an hour or more, comparing him unfavorably with another child who "eats better," bribing or punishing for not eating, and so on. But, would we be willing to include the subtler forms which are frequently used at mealtime, such as pointing out the nutritional value of the "protein rich" eggs which will "make you big and strong," emphasizing the importance of eating to get well when a child is ill, or making the child finish everything on his plate before he is allowed dessert? These examples are used to illustrate that while we readily recognize the questionable value of physically forcing food, some of the devices we use to mold food habits may actually be a less obvious form of "forcing."

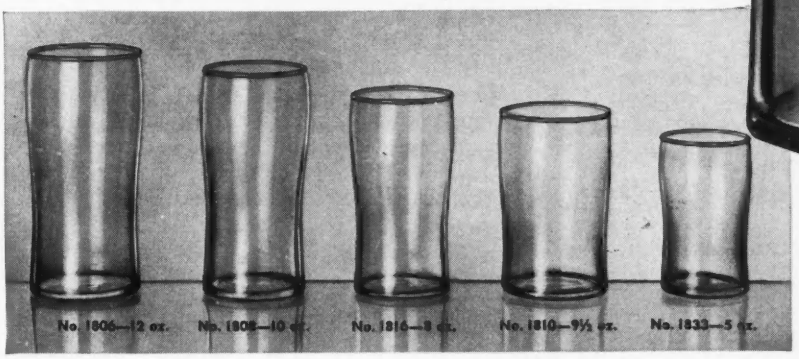
Dr. Margaret Mead in discussing the development of food habits in our American society describes it (4) as a "super-ego" problem—that "if you eat enough of the food that is not good but is good for you, you are then permitted to eat a little of the food that is good but is not good for you." How often have we not heard such statements as "you can't have your dessert until you have eaten your vegetables"; "come now, drink your milk, its good for you"; "eat your carrots, they have lots of vitamin A and are good for your eyes"; "too many sweets aren't good for you," and so on. Dr. Mead points out that by classifying foods as "right" and "wrong" foods, we are making food selection a moral issue rather than an automatic choice. The prize or reward value attached to the "wrong" foods makes them even more desirable, and "every meal becomes an experience in which an individual must decide between doing right or enjoying himself." Dr. Mead further states that "unless we can disassociate eating habits from this type of training of children, we may be able to make changes in the diet, but we will never have a population which eats, gaily and unquestioningly, food based on the best nutritional science which we have" (5).

THE CHILD'S APPETITE

Third, what are some characteristics of a child's appetite? As previously suggested, extensive studies and observations on the physical and mental growth and development of the child have been responsible for a shift in feeding practices away from the didactic methods of a few years ago to one of "listening" to the child. It has been possible to differentiate certain patterns of eating in the various age groups since this change has occurred. For example, at approximately one year of age, a majority of children will show a decrease in appetite. Dr. Frances Ilg considers these features in detail. She begins her discussion with the twenty-one-month-old child, since she feels that this is a common age for feeding problems to begin. The twenty-one-month-old shows definite preferences and can often detect differences in taste from one brand of food to another. Butter and cheese are real favorites of the two-year-old. Food jags in which the child insists upon eating one item day in and day out for long periods are particularly common at two and a half years. At three, the "strong, over-channelized desires of the previous year" are lessened, but by four, the child has returned to food jags and even food strikes. The five-year-old may be willing to accept what is offered and is influenced by the eating habits of others including radio advertising. "Six shows even stronger preferences and refusals." By seven or eight, the child may be more cooperative in trying new or disliked foods, and by ten or eleven, the adolescent appetite has begun and "the child thinks about food, dreams of food, and in fact would like to eat all the time" (6).

Meet Libbey's new "COLUMBIAN" Tumbler Line

. . . a Heat-Treated companion to the famous Libbey Columbian Stemware!



ACTUAL SIZE
8 Oz. Hi-ball "COLUMBIAN" Pattern

CURVED GENTLY for sleek, smooth eye-appeal.

Yet straight enough to offer plenty of "display room" for an individual crest or design.

That's the mold from which we bring you the new, Heat-Treated "COLUMBIAN" tumbler.

Greater space for selling decoration is an "extra," of course—for "COLUMBIAN" has *all* of the typical Libbey Heat-Treated Tumbler advantages. It's lightweight, easy to hold . . . *lasts 3 to 5 times longer* than ordinary tumblers. Every one is backed by the amazing Libbey guarantee: "A new glass if the 'Safedge' ever chips."

Give "COLUMBIAN" an opportunity to show *you* its eye-appeal and durability. Request samples and prices from your nearest supply dealer or Libbey sales office—or write directly to Libbey Glass, Toledo 1, Ohio.

LIBBEY GLASS **BOUNCE TUMBLERS**

Libbey HEAT-TREATED

Libbey Glass, Division of Owens-Illinois Glass Company, Toledo 1, Ohio

These patterns demonstrate quite clearly that the child's appetite is not a steady thing but changes as he changes. They serve as an important guide by giving suggestions for what may be expected in the child's feeding behavior at different stages in his development. Parents (and others who direct feeding programs) who have been forewarned about "what to expect" are in a much better position to handle "the ups and downs" of the child's wants and needs calmly and without too much concern. This is an important factor in the prevention of feeding problems.

Further evidence of the nature of the child's appetite is expressed in a somewhat different way in the children observed by Dr. Clara Davis. She noted (3) that (a) although they showed decided preferences, it was "impossible to predict what would be eaten at a given meal"; (b) eating occurred in waves, i.e., "after eating cereal, eggs, meats, or fruits in small or moderate amounts for a number of days, there would follow a period of a week or longer in which a particular food or class of foods was eaten in larger and larger quantities until astonishingly large amounts were taken; after this, the quantities would decline to the previous level."

The discrepancy in food intake between two children of the same age is another source of confusion to parents. Differences in rate of growth, body stature, hereditary influences, and so on may help to explain the variation and emphasize again the necessity of thinking of the individual child and what is normal *for him*.

FOOD PREFERENCES OF CHILDREN

Fourth, what are the child's preferences for foods? It is frequently difficult for an adult to think in these terms. Complaints of poor appetite are often accompanied by comments as, "I serve the food hot, but Jimmy lets it stand until it is cold." "Ronald chews meat, but he won't swallow it." "Jane won't eat cooked vegetables, but she does like them raw." From her wide experience in feeding groups of children, Dr. Miriam Lowenberg states (7) that the food itself may be an outstanding factor in the child's refusal of food. To list some of her "trade secrets": Children like plain and unmixed foods (this may explain the general listing of creamed dishes among the "disliked" foods on the questionnaire). Since lukewarm food is preferred to extremes in temperature, the consistency of things such as mashed potatoes which change with temperature changes must be given special consideration in preparation. A child when mastering the mechanics of "hand-to-mouth feeding" is also learning about food through its "feel" as well as taste; thus foods which can be picked up are more acceptable than foods difficult to manage. Meats which are hard to cut or chew may be rejected because they are too bothersome.

The question of flavor is also worthy of consideration. Some children dislike strong flavors, whereas the appetite of others may be whetted by the use of spices or seasonings in moderate amounts.

Dr. Lowenberg stresses, too, the need for providing "easy-to-handle eating utensils" and recommends (7) flat soup bowls or plates with curved edges; glasses which are low and squat and light in weight; short, blunt-tined forks with broad short handles, such as salad forks, and spoons which are shovel-shaped with shallow bowls. If the child is eating at the table, the size of the table and chair he uses should be one that is comfortable for him—a chair which allows his feet to touch the floor and provides a straight back rest.

SUMMARY

We have, then, a child with his own idea of "what and how to eat," a child whose appetite fluctuates, a child whose dietary intake is influenced not only by "what" he is offered and "how" it is offered, but also a child who will eat "enough" (assuming he is served a varied diet of essential foods) when all these factors are recognized. It would seem that our function as dietitians in reducing the incidence of feeding problems plus establishing food habits is an important and influential one. It involves not only teaching food and nutrition but also (a) cultivating a feeling and appreciation of the child as a person, (b) acquiring a complete knowledge of the factors that make and affect his appetite, and finally, (c) adopting a critical attitude towards our methods and techniques.

REFERENCES

(1) Aldrich, C. A., and Aldrich, M. M.: Feeding Our Old Fashioned Children. New York: Macmillan Company, 1947.

(2) Dept. of Pediatrics, University of Chicago Clinics: Liberal infant feeding. J. Am. Dietet. A. 22: 602, 1946.

(3) Davis, C. M.: Self-selection of diet by newly weaned infants. Am. J. Dis. Child. 36: 651, 1928.

(4) Mead, M.: The problem of changing food habits. Bull. Menninger Clin. 7: 57, 1943.

(5) Mead, M.: Dietary patterns and food habits. J. Am. Dietet. A. 19: 1, 1943.

(6) Ilg, F.: The child's idea of what and how to eat. J. Am. Dietet. A. 24: 658, 1948.

(7) Lowenberg, M. E.: Food preferences of young children. J. Am. Dietet. A. 24: 430, 1948.

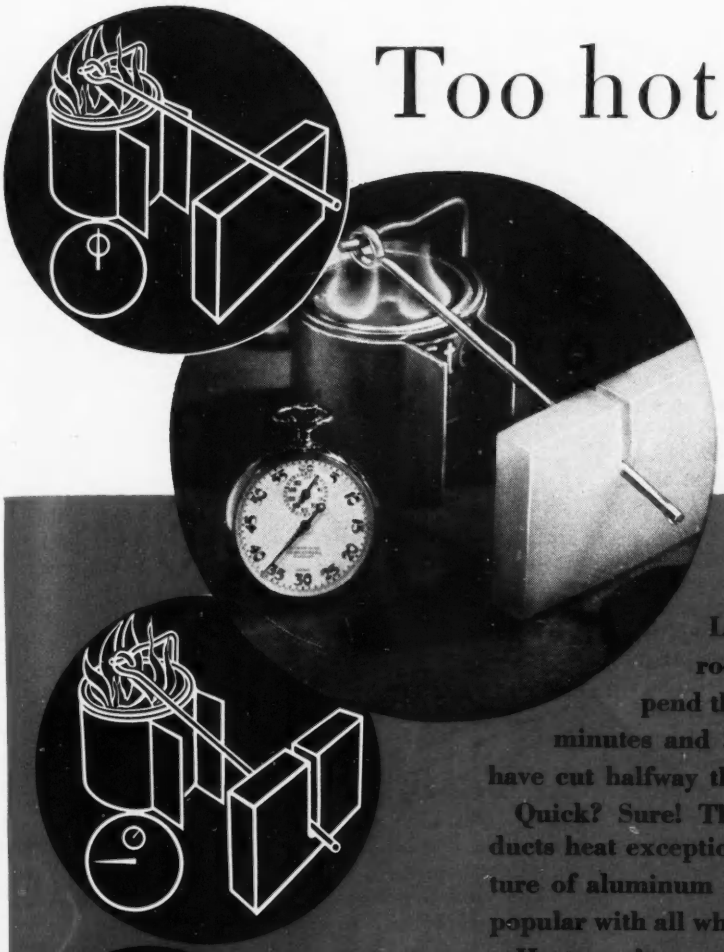
GROUP FEEDING FOR HOSPITALIZED CHILDREN

LORRAINE WENG

Nutrition Clinic, University of Chicago Clinics

If we take a group of hospitalized children and study them individually, their "differences" are immediately apparent. Medically they present different problems—some are acutely ill, some chronically, some are convalescing, some are being studied

Too hot to handle



...BUT IT'S THE SECRET OF BETTER COOKING

Lay one end of an aluminum rod on a block of paraffin. Suspend the other end over a flame. Two minutes and 31 seconds later the rod will have cut halfway through the wax.

Quick? Sure! That's because aluminum conducts heat exceptionally fast. This important feature of aluminum is the reason Wear-Ever is so popular with all who use cooking utensils.

Heat can't *concentrate* where the flame is. Instead, it is diffused fast and evenly throughout the utensil. This makes good cooking and baking easier and surer.

SEE THIS TEST YOURSELF

MAIL THE COUPON

Mail the coupon at right for a demonstration. Prove to your own satisfaction that you can't beat Wear-Ever aluminum utensils for fast, even spreading of heat.

The Aluminum Cooking Utensil Co.
1307 Wear-Ever Building
New Kensington, Pa.

I am interested in seeing a quick demonstration on how aluminum diffuses heat fast and evenly. *No obligation.*

NAME_____

TITLE_____

ASSOCIATED WITH_____

ADDRESS_____

CITY_____ STATE_____

Made of the metal that cooks best

WEAR·EVER *Aluminum*

WEAR-EVER ALUMINUM TRADE MARK

for evaluation and diagnosis. They come from families of different economic and social levels and parents who vary intellectually and emotionally. There will be children who are well adjusted and who have had wise and intelligent care, but there will also be children who are poorly adjusted. They will differ in age and physical and mental attainment. Their interests will be different, for each is a personality—one will be quiet, reserved, serious, another boisterous, gay, outgoing, and there will be all gradations between the two extremes. The list could be enlarged.

The outstanding point of similarity between these children is that they have all been removed from a familiar environment because of some real or suspected disturbance in their well-being and transposed to what may be an impersonal, highly organized system of hospital routine. They will have mixed reactions depending upon numerous things, such as the degree of illness, the preparation and and explanation they have had for the hospitalization, the kind of personality, and so on. Some will adjust easily, others will be apprehensive and afraid.

Since feeding is such a vital part of the care of the total child, the dietitian may serve an important function in giving consideration to each child's needs through the type of food service she devises. The purpose of this discussion will be to present some suggestions on meeting the problem of establishing a food service which applies the newer knowledge of normal growth and child development on an individual basis. The results of the survey previously described (1) indicated that currently the traditional tray service is the usual method of serving. In some cases, the children may eat together at tables after their plate or tray has been served. In a few, a group plan of feeding including some self-selection is used.

This presentation will include four main points: (a) the advantages of obtaining a dietary history of each patient when first admitted to the hospital, (b) the advisability of including some self-selection of foods, (c) comments on a group plan of feeding, and finally (d) a description of a group feeding plan which was reported by one hospital in the survey.

HOW DIETARY HISTORIES CAN HELP

A complete dietary history of each child, which includes information on what he has been eating; his particular likes and dislikes; how he has been fed, i.e., whether he is feeding himself, encouraged or forced to eat, allowed to eat as he wants, fed at regular or irregular hours; or any other problem related to food might very well serve as a starting point in this program of individualized feeding. Knowledge of the child's previous behavior will give some clues as to his background and personality and will help to explain why he eats as he does. This understanding is essential to a successful plan of child feeding and will aid in formulating objectives in his feeding regime while in the hospital.

Reassuring the parent is a very necessary part of caring for the child. Parents are often anxious and worried about the child's reaction to being left among strangers who "may know all about him as a 'case' but nothing about him as a person." Giving the parents a chance to describe the child's appetite may instill a sense of confidence that the hospital personnel is interested in the patients as people, too.

ADVANTAGES OF SELF-SERVICE

The food intake of nursery school children has been studied when different methods of serving are used. A study conducted at the Purdue Nursery School compared "standard" and "self" service (2). With standard service, the food was put on the child's plate before he came in for his meal. The self-service plan involved having the child put the foods of the regular nursery school menu on his own plate. This included milk and dessert. The children were told to take as much as they thought they could eat and that they could return for more. A tabulation of the results indicated that, in general, although the milk intake was decreased, more protein-rich foods, raw foods, potato and rice, and desserts were eaten with self-service. This study indicates that the method of serving food to children *does* influence their food intake.

Evidence was presented in the first section of this report (1) to show that children *are* capable of choosing suitable diets from an assortment of natural wholesome foods when they are not restricted by rigid adult standards of how they should eat.

With this as a basis, we can feel a little more freedom in placing the responsibility for eating on the child and perhaps adapt some self-selection to the hospital food service for children. What would be some of the advantages of using this method? If we were to list the causes of poor appetite in children, perhaps we would list first their physical condition. Many feeding problems have had their origin during illness and convalescence because of overzealous attempts to encourage food intake when appetite is at a low point. By choosing his own food, the child himself can make the necessary adjustments for his decreased appetite.

Maintaining the normal functioning of appetite in the child necessitates respecting the factors that "make his appetite." As noted in the first part of this report, the outstanding characteristic of the child's appetite is its variation from time to time and from child to child. If the food intake is adjusted to these changes without undue stress by allowing the child to indicate his preferences, it is usually noted that after a period of "unorthodox" eating, the child will return to a more "normal" pattern. Freedom in the choice or amount of food suggests to the child that "it is something he eats because he wants to" rather than "because by his acceptance or rejection

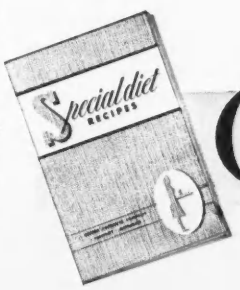
"Now–meat on your menu, Mrs. Adams!"

Meat—real meat—has been added to Gerber's Special Diet Recipe Booklet! You can now introduce your special diet patients to six enticing Gerber variations: Strained Beef, Strained Veal, Strained Liver, Chopped Beef, Chopped Veal, Chopped Liver.

Each one, made of Armour's quality meat, lures the eye with tempting, true-meat color —coaxes the appetite with the delicious, true-meat flavor. All six have the Perfected-Texture that's highly digestible.

You can be sure that essential food values are carefully protected in the processing of Gerber's Meats, as in all of Gerber's 45 True-Flavor Foods. In fact, such protection is a major matter to us. Final timely note: Gerber's famous-for-flavor, ready-to-serve Meats, Cereals, Fruits and Vegetables cost much less than many of the special-diet foods prepared at home.

FREE
to use with your Patients:
New Special Diet Recipe Booklet—including Gerber's Meat Recipes.
Analyses of Meats.
Professional Reference Cards.
Write to Gerber's, Dept. 237-9, Fremont, Mich.



Gerber's
Fremont, Mich.

of the food he is pleasing or displeasing the person who is offering it." Consequently, refusal of food as a result of emotional interplay between the child and adult is minimized, and food can serve its primary function of satisfying hunger. The sense of participation which would come with being given some opportunity to express himself would be important in making the mealtime pleasant and happy.

GROUP FEEDING PLAN

The influence of other children and the presence of an adult who is friendly and interested but not overly concerned about "how much" or "how" each child is eating probably accounts in great measure for the success of the nursery school plan of eating. Freud and Burlingham in reporting their observations on children housed in residential nurseries during the war state (3) that, "since the child in a nursery never eats alone, mealtimes with the pleasure they bring can be made to play an important part in the child's development towards taking pleasure in social life and adaptation to it." This group plan of feeding has been suggested as a desirable plan for use in the hospital and is enthusiastically reported by those who have actually tried it. Among the principles outlined by Isabelle Jordan (4) as important in establishing a "personalized nutrition service" are "establishing and maintaining a friendly relationship; providing opportunities for learning experiences connected with food and eating; promoting the development of acceptable social behavior; encouraging good general health habits, including those which relate to food; promoting security and reducing fears; and helping the child achieve satisfaction from the activity in which he is engaged."

Does the group plan of feeding answer these principles? The thing which stands out most sharply in this listing is that a plan of feeding which provides for several children eating together will by its very nature fulfill most of the objectives. (The success or failure of the plan may depend to a great extent not only on the ability but the personality of the person who is supervising. The factors that detract from the effectiveness of a happy mealtime—too much stress on manners, eating habits, discipline, and so on—can be learned. This is not enough. The person must also have a feeling for and interest in children. For this reason, it is important that serious thought be given to the selection of those participating actively in the plan.) The relationship which is encouraged among the children and adults is warm and friendly giving each child a chance to know the others better. This should help in "promoting the security" and "reducing the fears" which may be present in the hospitalized child. Opportunities for learning and the development of acceptable social behavior are provided by enabling the children to observe "what and how" the others eat and act and may encourage the individual child to become more adventuresome in the selection of his food. The pressure exerted by the group would be more effective than any mere statement of fact by an adult.

Tables which are set with attractive dishes and surroundings which are cheerful help to create a "homelike" atmosphere. If it is possible to let the children help with the table setting and serving, the feeling that they are "helping" may not only increase the general agreeableness of the meal but it may help to make the whole hospital experience more pleasant. Obviously, this is important both for its effect on the child's present illness and because of any possible future hospitalizations.

Questions are frequently raised as to how much influence can be exerted on food habits when the hospital stay may be so short. This may be true to a certain extent but actually, if we can provide a mealtime which is enjoyable to the child and encourage the idea that eating is fun, we have accomplished one very important step in "encouraging good general health habits." A plan of feeding such as described has the potentialities for doing this. If it is coupled with a plan for teaching parents, the time spent in the hospital could furnish a sound foundation for feeding at home.

As a teaching device for student nurses, medical students, dietetic interns, new attendants, and other hospital personnel, this plan has many possibilities for it provides an opportunity to observe in a setting similar to that in a home the reaction of different children to food—their likes and dislikes and the possible factors influencing them; how different children eat; the importance of adjusting the size of portions to the individual child; the food itself, how it is prepared and served; and so on. A plan of parent education based on the observations of the plan with specific recommendations for the individual child may be more easily outlined when it has been possible to see the child eating with a group.

THE GROUP PLAN IN ACTION

To illustrate how this plan may actually function, the following description of the service at the Johns Hopkins Hospital as written up in the questionnaire is included. Ambulatory patients are served "family style" in a playroom. Some children who must stay in bed are allowed to be pushed into the playroom and served there also. Others are served in the usual tray service fashion. The food is brought in in bowls, placed on the tables, and served by one of the children (anyone who wants to is allowed to serve with assistance given by an adult according to the age and ability of the child).

Supervision is supplied by the play-school staff and student nurses serving as play nurses (under supervision of staff). Ideally, it was felt that dietitians would be included in a supervisory capacity.

There is not a variety of foods from which to choose, but the size of the serving is determined by

HOSPITAL DIETITIANS MARK THESE THRIFTY CEREALS

Musts!

Post's INDIVIDUAL CEREALS

Thrifty? Yes!

Fresh? Yes!

Real Variety? Yes!

Bonus for You? Yes!

"MUST" FOR THRIFT! Many hospital dietitians insist on Post's Individual Cereals. They say the 1-oz. individual packages save food money because the packages can be served again, if unopened.

"MUST" FOR FRESHNESS! Every package of Post's is cellophane-wrapped. That means the product is fully guarded. Freshness and cleanliness are sealed in.

"MUST" FOR VARIETY! Patients smile when you give them a real choice of cereals. Post's Individual Cereals provide the complete breakfast shelf . . . a cereal for every taste.

AND A "MUST" FOR YOU! Like almost all other General Foods institution products, Post's Individual Cereals are packed with valuable premium coupons . . . offering *you* gifts for home, office, or kitchen. Get full information from your G. F. man or General Foods Institution Dept., Battle Creek, Mich.

POST'S *Individual* CEREALS

PEOPLE WHO TALK ABOUT GOOD FOOD
...TALK ABOUT GENERAL FOODS!

the preference the child expresses as well as what is known about his appetite. He is encouraged to try everything but is never forced or bribed to eat anything he does not want. In cases where a child consistently rejects one type of food, he is given as much as he wants of his favorite food. Usually after the third serving, however, he is encouraged to try small servings of other foods as well. Desserts are served at the end of the meal but are given regardless of what the child has eaten and are not used as a bribe or reward. New or unfamiliar foods are introduced in very small servings, in a form known to be liked by the children, and with a matter of fact attitude by the adults. The person supervising does not eat with the children, although it was felt advisable.

Policies and techniques are determined on a cooperative basis by the dietary, medical, nursing, and play-school staffs. The reaction of doctors, nurses, and others to this system has been one of wholehearted approval and cooperation. The children themselves almost always prefer to eat in the playroom, and eating habits and independence in self-feeding improve under the stimulus of group eating.

The necessary physical setup included a playroom or adequate space on the ward, plus tables and chairs of the correct size for children of various ages (and size). One adult for each four or five children is required and more if a majority are of preschool age. A one-way vision screen would make it possible to observe children who present difficult feeding problems and who may not react well before observers.

Other institutions will have questions, such as: How can the cooperation needed between departments be obtained? How can it be adapted to the physical setup of the hospital using the personnel and equipment that are available (or could be obtained)? How does the time and labor involved compare with the conventional type of food service? What are the differences in waste incurred? It will take time and effort to plan and execute such a program. Resistance will be met and difficulties encountered. However, an awareness that our increased knowledge of the child and his reactions to food has not always been applied to the practical aspects of his feeding serves in itself as somewhat of a challenge to see what we can do to improve our food services for children.

REFERENCES

(1) Weng, L.: The child and his food. J. Am. Dietet. A. 25: 616, 1949.

(2) Justice, C. L., Mattson, M. L., and Schuck, C.: Some factors influencing the food intake of preschool children. J. Am. Dietet. A. 22: 128, 1946.

(3) Freud, A., and Burlingham, D.: Infants Without Families. New York: International University Press, 1944.

(4) Jordan, I.: The nurse's approach to child feeding practices. J. Am. Dietet. A. 25: 626, 1949.

THE NURSE'S APPROACH TO THE FEEDING OF CHILDREN[1]

ISABELLE M. JORDAN, R.N.

Specialist in Nursing Care of Children, Children's Bureau, Federal Security Agency, Washington

In the feeding of children, the nurse's approach depends upon what she knows about the developmental needs of children nutritionally and her acceptance of and by individual children.

Let us suppose that you, a dietitian, and I, a nurse, were to go into Ward A of X Hospital and observe the serving of dinner to a group of children between the ages of three and twelve years. Suppose we asked ourselves the following questions and wrote down our answers for the purpose of discussion afterwards:

Are the children interested in and eager for their food?

How much choice are they allowed?

What differences are there in the time it takes children to eat?

How are decisions made as to the size of portions for individual children?

Do the adults participate in conversation with the children while they eat? If so, what is the conversation like?

What is done by the adults when a child refuses food?

Are the children required to eat everything that is served them?

What happens when they want seconds? thirds? fourths?

Are the foods, utensils, and methods of serving the same for three-year-olds and twelve-year-olds?

Were any of the children who are up during mealtime helping with the serving of food for themselves? for others?

At the end of our observations, I think that both you and I would probably say, "There should be some changes made."

Let us review together what we observed.

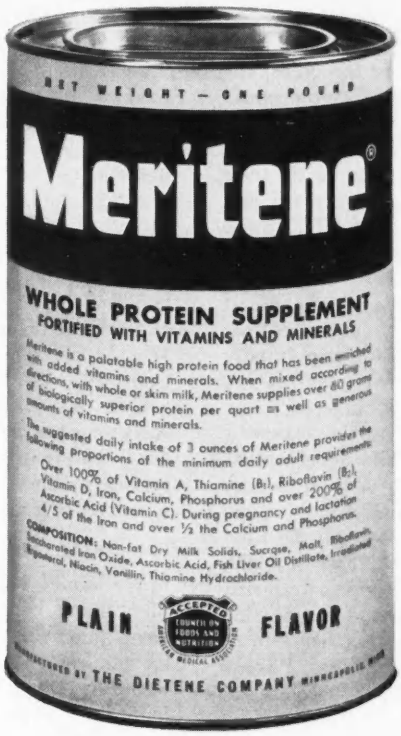
NEED FOR PERSONALIZED SERVICE

In the small ward kitchen, we first saw a friendly, interested, understanding, but very busy head nurse serving all the trays. The trays were carried to the children by the student nurses, some of whom had been assigned to the ward only a few days before. As we talked with the head nurse, she emphasized two important points: one, that the same person should serve as often as possible; two, that it would be nice if the children could have a greater choice of foods, especially "those children who will be in a long time or who will have frequent readmissions."

As long as the head nurse was present, the meal

[1] Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 22, 1948.

Solve the Protein Taste Problem with...


NET WEIGHT — ONE POUND
Meritene®
WHOLE PROTEIN SUPPLEMENT
FORTIFIED WITH VITAMINS AND MINERALS
Meritene is a palatable high protein food that has been enriched with added vitamins and minerals. When mixed according to directions, with whole or skim milk, Meritene supplies over 80 grams of biologically superior protein per quart as well as generous amounts of vitamins and minerals.
The suggested daily intake of 3 ounces of Meritene provides the following proportions of the minimum daily adult requirements:
Over 100% of Vitamin A, Thiamine (B1), Riboflavin (B2), Vitamin D, Iron, Calcium, Phosphorus and over 200% of Ascorbic Acid (Vitamin C). During pregnancy and lactation 4/5 of the Iron and over ½ the Calcium and Phosphorus.
COMPOSITION: Non-fat Dry Milk Solids, Sucrose, Malt, Riboflavin, Saccharated Iron Oxide, Ascorbic Acid, Fish Liver Oil Distillate, Irradiated Ergosterol, Niacin, Vanillin, Thiamine Hydrochloride.
PLAIN
ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION
FLAVOR
MANUFACTURED BY THE DIETENE COMPANY MINNEAPOLIS, MINN.

MERITENE tastes so good that patients really enjoy taking it. Just 3 ounces of MERITENE, mixed with milk, will provide over 50 extra grams of whole protein in your patient's daily diet. MERITENE is available in one-pound cans, plain or chocolate flavor, at only $1.65 per pound. Special prices to hospitals on 5- and 25-lb. cans.

The proof is in the tasting, and MERITENE does taste good. Send for sample today.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

Not advertised to the laity . . .

THE DIETENE COMPANY MD 79
518 FIFTH AVENUE SOUTH, MINNEAPOLIS 15, MINNESOTA

Please send me a free sample of MERITENE, the fortified whole-protein supplement, and descriptive literature.

Name . . . . . (Please Print)

Address . . . . . .

City . . . . . Zone . . . . State . . . . . .

went very satisfactorily. But soon she left for her lunch, and the students carried on alone. Then we heard remarks such as these: "Clean up your plate, and I'll give you seconds on meat." "No dessert for you until you finish your beans." "What's the matter, Mary, aren't you hungry today?" and to three-and-a-half-year-old Susan, who had tipped over her glass of milk while reaching for her pudding, "Now look what you've done!"

We noticed, too, that the younger the child, the longer he took to eat. The so-called "slow ones" were constantly being prodded to "hurry up." The older children had not been furnished knives, and they struggled to cut their meat with their fork. Three or four of the children were up and around, and they ate together at a little table on the porch. We regretted that they had not been given an opportunity to help prepare or serve their meal. Although the atmosphere was pleasant enough, it contributed little to the social enjoyment of eating, and one had the feeling that attention was pointedly centered on the next activity, which was, "to get ready for rest hour."

We would conclude, I think, that the significance of feeding from the point of view of child development was almost completely lacking in this situation. I'd like to feel that the dinner might have gone better if the head nurse had been there all the time because she seemed to have a personal interest in the children. While she was serving the trays, we heard her say such things as, "Mary may not want this much vegetable, but tell her to eat what she can of it," or "Skip Johnnie and give this to Peter. I know I put too much gravy on that meat for Johnnie." Yet, despite her natural interest in the children as individuals, I doubt that she would have been able to explain why she did or did not do certain things. After you and I have talked a little more about our observations, don't you think we might invite her to join our discussions? Also, we might need to talk over some of our ideas with the doctors and the administrator because we, as individuals, cannot do what needs to be done in this situation without some administrative changes.

WHAT IS ADEQUATE NURSING CARE FOR CHILDREN?

How do our observations relate to adequate—meaning satisfactory—nursing care? Most of us would agree, I believe, that hospitals *want* to provide adequate nursing care to patients. But just what constitutes adequate nursing care of children?

According to "A Study of Pediatric Nursing" (1) made in one of the pediatric wards at the New York Hospital under the sponsorship of the Children's Bureau and the National League of Nursing Education, adequate pediatric nursing is "that type of nursing in which the fundamental elements making for satisfactory child care are preserved." In the study, this concept was used whether the worker was a graduate nurse, a student nurse, or a trained practical nurse.

Perhaps the most important contribution of the study was *the defining of the essential elements, physical and psychologic, which make up good pediatric nursing.* Using these definitions, we can begin to discuss our observations on this imaginary Ward A as they relate to the fundamental elements making for satisfactory child care.

First, would you agree that methods of serving food to children in most hospitals have not kept pace with knowledge of child development?

Would you also agree that in order for us to bring hospital methods up to date in their child feeding practices we have two jobs to do—first, to develop a dietary service which can fit into the framework of a highly complex hospital organization; second, to find ways and means to individualize the service to children of various ages? "The personalizing of clinical medicine . . . exemplifies the ideal in preventive medicine, not in the narrow sense of nutrition but in the broad aspects of human growth and well-being" (2). I think this is equally true in the work of a nurse or a dietitian. Thus we could say that what Ward A needs is a personalized nutritional service within a service which, because of the magnitude of its task, must also be regularized.

PRINCIPLES AND PRACTICES OF PERSONALIZED SERVICE

We would wish for Ward A, then, the creative functioning of the psychologic principles of child development as they apply to the feeding practices for children rather than a set of prescriptions which would be followed blindly. I suggest that some of the following principles and practices would be desirable:

(a) Learning from parents as much as we can about the child's appetite, food likes and dislikes, and any special problem related to food.

(b) Establishing and maintaining a friendly relationship.

(c) Modifying procedures and equipment relating to eating with respect to the child's developmental stage, physical condition, and family background.

(d) Providing opportunities for learning experiences connected with food and eating. In this connection I am reminded of seven-year-old Mary, who had hypoproteinemia. She had been put on a high-protein diet, including a good many eggs (it was during the war when meat even for patients was difficult to get). Mary's egg for breakfast had been served with surprising similarity of style; one morning she asked the nurse serving her breakfast, "Is this the way an egg looks when it comes from a hen?" The wide-awake head nurse took the opportunity to show Mary how eggs look when they come from a hen and the many different ways that they could be made palatable. In no time, Mary—neatly dressed in an apron over her pajamas and sitting

You can show yourself in a few seconds How *Accent* makes foods taste better.

Ac'cent is mono sodium glutamate—a wholesome, natural derivative of vegetable protein which remarkably intensifies the natural flavors of foods.

Every day a food parade lines up for the dietitian's critical inspection and approval. Tasting is the important criterion by which you—and your customers or patients—judge every item on your menu.

If you do not know what Ac'cent can do to improve even your best food production, try a series of A and B tests for yourself. Better still, let your entire production and service staff take part. It is simple to do, and very convincing.

A vs B at the soup unit. Take 2 portions of your own seasoned chicken broth, or beef broth, or a cream soup. Add ¼ teaspoon of Ac'cent to one of the cups. Taste both.

A vs B at the hot unit. Take 2 hamburger patties. Spread ¼ teaspoon of Ac'cent over one patty ten minutes before cooking. Cook both patties, seasoned as usual. Taste both.

See for yourself what a finer, fuller flavor the foods with Ac'cent have. The pronounced improvement in flavor is unmistakable.

Ac'cent adds no flavor, no aroma of its own—its effect is entirely on other flavors, bringing them out, blending, enhancing. Ac'cent does not "cover up" or disguise flavors . . . it intensifies good natural flavors that are already present in the food.

Better-tasting foods mean happier people. When foods are eaten with relish and appreciation you will have your rewards in compliments, and in the satisfaction of knowing your foods are pleasing.

Accent®... makes food flavors sing

Trade-mark "Ac'cent" Reg. U. S. Pat. Off.

Accent invites your inquiries

Our staff, long experienced in food preparation and thoroughly acquainted with the nature and application of this unique product, will welcome the opportunity to discuss its interesting possibilities in your operations.

Amino Products Division, Dept. ADA-6
International Minerals & Chemical Corp.
General Offices: 20 North Wacker Drive
Chicago 6, Illinois

In 1 lb. and 10 lb. cans and 100 lb. drums

FACTS ABOUT *Accent* OF SPECIAL INTEREST TO THE DIETITIAN

Ac'cent adds no flavor, aroma, or color of its own. A natural food-product itself, Ac'cent brings up natural food flavors. It helps in the preparation of nutritious dishes which have appetite appeal.

Ac'cent improves the taste of bland diets. Cooking helps to blur the raw, sharp profiles of many foods. Ac'cent helps further by emphasizing desirable flavors and tending to suppress those less desirable.

Ac'cent helps solve the "leftover" problem. The tastier foods prepared with Ac'cent mean fewer leftovers. Also, Ac'cent in the original cooking gives the leftovers a better, fresher flavor.

Ac'cent helps preserve flavors. It combats "steam table fatigue", helps hold flavors for longer periods.

Ac'cent is economical to use. A little Ac'cent goes a long way in large quantity cooking. Directions are explicit.

Ac'cent is easy to control. The amount of Ac'cent called for is weighed before application unless only a small amount is required.

Ac'cent presents no storage problem. Ac'cent is physically stable under normal conditions, is less hygroscopic than salt, is packaged in containers that give maximum protection.

Not a flavoring!
Not a condiment!
Not an ordinary seasoning!

Accent **is MONO SODIUM GLUTAMATE**

. . . over 99% pure, unadulterated, sparkling-white crystals. It is a natural, not a "synthetic" product. It is the sodium salt of the amino acid, glutamic acid, which occurs naturally in all vegetable and animal protein. Ac'cent is wholesome and good.

in a wheel-cart—was helping in the kitchenette with the preparation of her food.

(e) Promoting the development of acceptable social behavior.

(f) Encouraging good general health habits, including those which relate to food.

(g) Promoting security and reducing fears. In one sanatorium mothers were allowed to bring their children food from home on visiting day. Such foods included Italian spaghetti, ravioli, chicken soup prepared according to Jewish cooking methods, Chinese chop suey, and many other special dishes. The procedure was instituted for several reasons: First, it was war time and parents were bringing children toys which, because they were poorly made, were soon destroyed. Second, the physician realized that children away from home for relatively long periods need to have their home ties kept active and realistic. Third, he knew the sanatorium could not provide the individual child the particular food which was peculiar to his national custom as his mother could.

To the nurses, the procedure seemed very unorthodox, but they were willing to try it. It took many adjustments to make it function smoothly, and the parents, too, needed help in knowing how much to bring, what to bring, and how to bring the food cleanly and safely. The nurses worried, at first, about "infection" which might be brought to the children because they were caring for children with rheumatic fever and medically they felt they needed to care, but that problem was just a ghost in the closet; it never became a reality.

The supper menu on visiting day always provided a framework into which this procedure could fit. It was made out so that, for those children whose mothers didn't bring special food, supper would still be an enjoyable meal; or, so that the special supper belonging to a child could be pieced out with the sanatorium supper. Occasionally, a child was allowed a "tummy" full of Italian spaghetti or other special food without any addition from the sanatorium supper menu.

This procedure would need adjustment in each situation, but the desirability of applying its basic principles in all our children's services in hospitals is obvious.

Many values came out of this practice for the children, parents, and staff. It did a great deal for the feeling of security and "belongingness" of the child and his family. It was, in addition, an interesting experience to observe the ways in which individual children shared. Appetite for food rather than degree of illness was a real determining factor in the success of the practice with individual children. In this connection it was interesting to note that children from ordinary American homes preferred candy, potato chips, soft drinks, and fruit as "special dishes."

(h) Helping the child achieve satisfaction from the activity in which he is engaged.

(i) And, last but by no means least, providing for safety. This is also a part of modifying the equipment with respect to developmental age.

TECHNIQUES AND DEVICES

Some of the devices which are used to apply these principles are:

(a) Having one person as far as is humanly possible serve the meals from day to day. The child learns his food habits in the midst of a family situation. When he is removed from the home, the hospital becomes his temporary home. Therefore, we need to consider how best we can achieve the security which results from having a mother substitute relationship in the eating situation in the hospital.

(b) Having some kind of an informational data sheet on which are recorded the pertinent facts relating to his dietary history. Especially is this important with children under six years. I have not dwelt on the effects of illness on food intake and feeding practices. I believe such problems arising during illness are minimal when the principles underlying feeding practices are thoroughly understood and functioning in a feeding situation. When a child enters the hospital because of an illness, he does not become just a physical body to be treated; he does not stop growing and developing. Rather, he is all that he was before and, in addition, is affected by his illness. One can hardly personalize nutrition service to a child without some prior knowledge about him and his nutritional status.

(c) Making provision for some self-selection of foods. If we make available those foods which supply in abundance the nutritional elements required for good health and sound growth, we should allow the child to choose without suggestion, comment, urging, or limitation. Certainly, we may say, "Johnnie, we have carrots and beans today, which will you have, or do you want both? Will you have a lot or a little?" In this way, we avoid the objectionable comments of the student nurses on Ward A. Also, the child gets some satisfaction from the activity in which he is engaged and from the right and chance to choose.

Again, I wish to stress that no matter what the device we use to solve the problem—and we will need to use many in solving the food service problem on Ward A—we should work from the principles involved and not from the point of view of finding a single device or solution.

I would re-emphasize that the nurse's approach to the feeding of children depends upon what she knows about the developmental needs of children nutritionally and her acceptance of and by individual children. From the nursing schools in the United States, 36,195 nurses were graduated in 1947 (3),

CHIQUITA BANANA SAYS:

For a delicious, nutritious breakfast

BANANA BRAN MUFFINS

Starts the day the energy way

Any left-overs, split and toast!

Bananas help keep bread and cakes fresh and moist

How to make BANANA BRAN MUFFINS

Scaling weight for 1 muffin:—2 ounces (No. 16 scoop) 2 muffins per portion	5 lb. 2½ oz. mixture 40 muffins 20 portions	25 lb. 12 oz. mixture 200 muffins 100 portions
INGREDIENTS	**WEIGHTS OR AMOUNTS**	**WEIGHTS OR AMOUNTS**
Flour	1 pound (1 quart, sifted)	5 pounds (5 quarts, sifted)
Baking soda	½ ounce (1 tablespoon)	2½ ounces (5 tablespoons)
Salt	½ ounce (1 tablespoon)	2½ ounces (5 tablespoons)
Sugar	8 ounces (1 cup)	2 pounds 8 ounces (1¼ quarts)
Bran flakes	8 ounces (2 quarts)	2 pounds 8 ounces (10 quarts)
or		
Shredded bran	8 ounces (1 quart)	2 pounds 8 ounces (5 quarts)
Eggs	6½ ounces (4)	2 pounds (20)
Sour milk or buttermilk	½ cup	2½ cups
Melted shortening	4 ounces (½ cup)	1 pound 4 ounces (2½ cups)
Ripe bananas,* peeled	2 pounds 4 ounces (10 to 12)	11 pounds 4 ounces (50 to 60)

*Use fully ripe or all-yellow bananas

Sift together flour, soda, salt and sugar. Add bran and mix well. Beat eggs well. Add milk and shortening and blend. Add bananas, beating only enough to break them into small pieces. Add flour mixture, mixing only enough to dampen all flour. Bake in well-greased muffin pans in a moderate oven (375°F.) 30 to 35 minutes, or until muffins are done.

The bananas supply most of the liquid for these muffins. The batter is stiffer than usual for muffins.

If the 20-portion quantity is NOT made in a mixer, the bananas should be peeled and mashed just before they are added to the egg, milk and shortening mixture.

Brown-flecked—right for eating

Breakfast Menu

Orange Juice
Scrambled Eggs
Crisp Bacon
Banana Bran Muffins
Beverage

Serve piping hot!

FREE TO DIETITIANS!

Home Economics Department,
United Fruit Company,
Pier 3, North River, N. Y. 6, N. Y.

Yes, I want your new **DIETITIAN'S KIT.**

Name_____

Address_____

Hospital or Organization_____

and we graduate similar numbers every year. All of these nurses cared for children in their undergraduate days, and many will continue to do so in hospitals or on private duty. We would have no worry about what the nurse knows about feeding children if we were able to give her good teaching in the classroom and could follow it up with good practices under adequate supervision of either a well trained pediatric nurse or pediatrically trained dietitians or nutritionists.

REFERENCES

(1) Children's Bureau and National League of Nursing Education: A Study of Pediatric Nursing. New York: National League of Nursing Education, 1947.

(2) Senn, M. J. E.: Influence of psychological factors on the nutrition of children. Am. J. Pub. Health 35: 211, 1945.

(3) Facts about Nursing, 1947. New York: Nursing Information Bureau, American Nurses' Association, 1947.

Selective Menu Service for Children

If children in the hospital are given the opportunity to select their own menus, can they be depended upon to select foods which will provide sufficiently for their nutritive needs? This was one of the questions studied by Mary Margaret Shaw, Dietitian, and Jo Ann Jorden, Dietetic Intern, at the University of Kansas School of Medicine and Hospitals, Kansas City, Kansas.

Four children over eight years of age were observed for a period of two weeks on the pediatric service. Those children were ruled out who were on modified diets or whose illness had a serious effect on the appetite. In addition, a group of children between eight and fifteen years of age on the orthopedic ward were observed for seven days. The actual number of children on the orthopedic ward varied from seven to eleven each day. These children remained for a longer period of time; hence the personnel of the group was practically the same for the week.

From these workers' observations, it would seem that the child can usually be trusted to select a reasonably sufficient diet, provided the foods offered on the menu include those with which he is familiar, both as to kind and method of preparation. In fact, it appeared that the children "ate better" when they chose their own food. Though no precise data were obtained, it was noted that less food came back on the trays. The children did not go to extremes when checking the items on the menus they wished. While more than one dessert was frequently checked, the extra dessert resulted in an intake of more fruit, milk, or eggs. There was much enthusiasm connected with the privilege of selection, and much anticipation of meals to see whether they were received as checked. To provide for any "change of mind" at mealtime, extra amounts of all foods were on hand and served if requested.

It would seem that a part of the better eating as indicated by cleaner trays was due to the fact that the children had chosen the food themselves. It was found that greater food acceptance followed a recognition of the child's "like and dislikes." In this connection, a food history obtained from the parent when the child entered the hospital was of distinct value.

These dietitians feel that further study of this problem is needed and they propose that much would be gained by pooling the results of such observations in many hospitals. In this way consideration could be given to the administrative and dietary problems encountered as well as to the child's ability to select food sufficient for his needs.

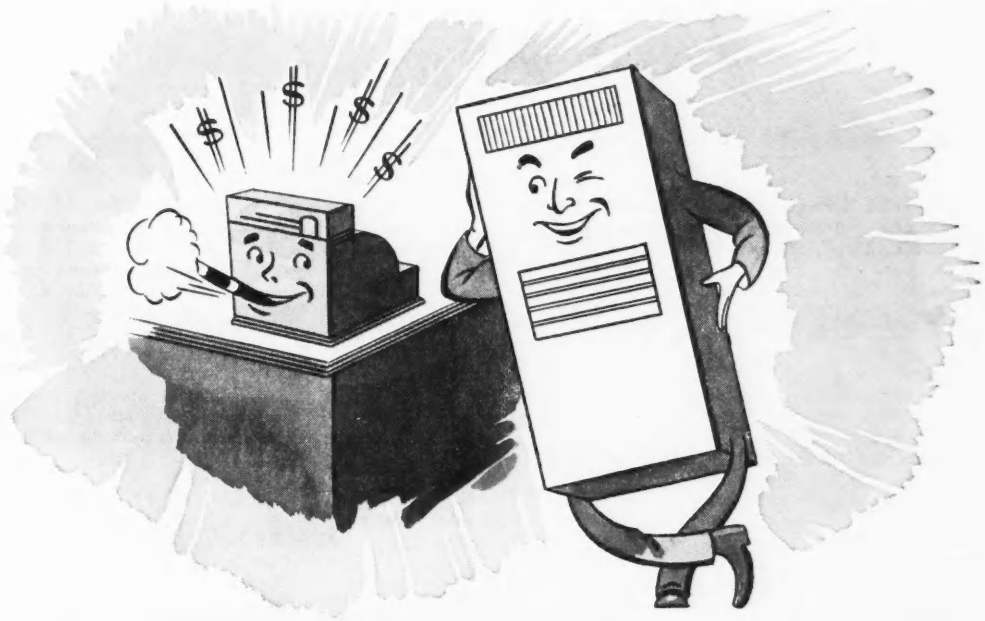
What the Consumer Should Know About Bread

Few farmers in our area would consider buying cow feed as their wives buy bread. Most of the feed sold in our area carries a statement on every bag that gives the exact per cent of ingredients mixed together to make the feed. The housewife is certainly no less intelligent than her husband who feeds cows. . . . Every loaf of bread should state its content of essential nutrients in terms of protein, calcium, vitamins, and other ingredients.

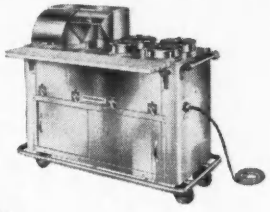
These matters have been given scant consideration. The subject of greatest debate concerns the use of so-called softeners. Some chemical companies have developed compounds that will keep bread softer for longer periods. Some also claim great loaf volume. One group has opposed these on the grounds that they provide another means of selling the housewife old bread that is still soft.

Little is known about the effect of these softeners on the human body, but any substances that have such profound effects upon the constituents of bread may well affect the intestinal wall.

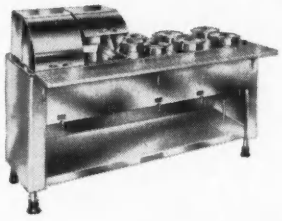
Time and science will tell, but damage may be done in the intervening years.—*Dr. Clive M. McCay in Journal of Home Economics 41: 179 (April), 1949.*



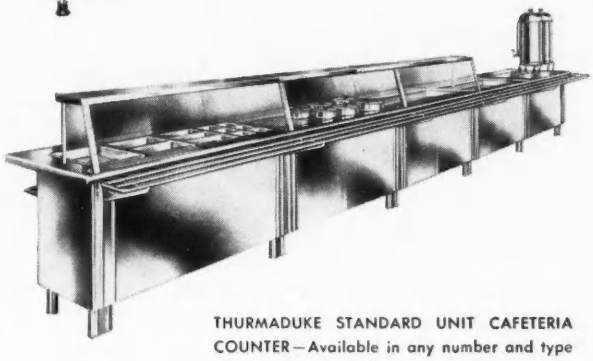
—as the AIR-CONDITIONER said to the CASH REGISTER...



THURMADUKE PORTABLE goes anywhere on easy rolling rubber tires.



THURMADUKE STANDARD — Many other sizes available.



THURMADUKE STANDARD UNIT CAFETERIA COUNTER—Available in any number and type of units desired to fit your particular requirements.

Boy, that new THURMADUKE sure solved all our problems and the boss' too! *You're* taking in more money than ever before and *I'm* only working half as hard. That new THURMADUKE is so much better insulated than the other food warmer we had, I don't have to fight so much hot air all day long.

Yep, the boss is a smart man, all right . . . checked every single food warmer on the market before he bought. Checked construction, insulation, methods of heating, controls—even looks. Found that THURMADUKE had 'em all beat a country mile—*and cheaper to operate, too.* And THURMADUKE comes in all types and sizes, from small buffet warmers up to complete, unit-built cafeteria counters with all the trimmings.

No wonder the boss says: *For my money,* THURMADUKE *is the only buy.*

***Write* for catalog X-469**

OR SEE YOUR THURMADUKE DEALER, NOW

DUKE MFG. CO. • ST. LOUIS 6, MO.

Book Reviews

Social Medicine—Its Derivations and Objectives. By the New York Academy of Medicine, Institute on Social Medicine. New York: The Commonwealth Fund, 1949. Pp. 294. Price $2.75.

The inspiration for this book arose out of a symposium on social medicine held in 1947 as a part of the centennial celebration of the founding of the New York Academy of Medicine.

According to Dr. George Baehr, President of the New York Academy of Medicine, it was intended that these proceedings "focus attention upon the urgent need for a more systematic coordination of our efforts to investigate the social factors responsible for disease and to develop and ultimately apply a long-range program of correction."

It is of interest that the concept of social medicine developed as a by-product of the labors of a committee appointed in 1943 by the New York Academy of Medicine to study the problem of adequate medical care. This committee found that although excellent medical care was available, it was not well distributed nor within the reach of large numbers of people. It revealed glaring discrepancies in medical thinking between the science itself and the services offered. These services were shown to be inadequate not only for physical needs but even more strikingly inadequate for emotional and social needs. From this study, the idea of an institute on social medicine emerged.

"Social medicine" is defined in the introduction as the product of the anabolism of the biologic, psychologic, and social sciences, with little relationship to so-called "socialized medicine."

Social medicine is concerned with man as a member of society—subject to poverty, inadequate food, poor housing and conditions of work, war and international conflict, all of which have an important bearing on the prevalence of disease. To broaden the scope of knowledge, physicians, philosophers, public health, and nutrition experts, educators, psychologists and sociologists participated.

The urgency for an understanding of the ills of society is pointed up by several speakers in terms of the little time remaining before the destruction of civilization by the atomic bomb unless conflicting cultures, ideologies, and other structures are reconciled.

In conclusion, a convincing thesis is developed for the physician to assume social leadership in bringing influence to bear on the ills of society.

The content of the symposium includes:

I. Changing Concepts of the Relation of Medicine to Society
II. Social Medicine: Its Differentiation from and Relation to Clinical and Preventive Medicine
III. Epidemiology in Social Medicine
IV. The Place of Nutrition in Social Medicine
V. Social Psychiatry and Social Medicine
VI. Social Applications of Psychiatry
VII. Social Medicine: The Appeal of the Common Man

"The Place of Nutrition in Social Medicine" is developed under the following topics: "Nutrition and Social Medicine" by Frank C. Boudreau, Executive Director, Milbank Memorial Fund; "Planning Food Supplies" by John M. Cassels, Chief, British Commonwealth Division, Office of International Trade, U. S. Department of Commerce; "Marketing and Diets" by John D. Black, Professor of Economics, Harvard University; "Education of the Public in Nutrition" by Clair E. Turner, Professor of Biology and Public Health, Massachusetts Institute of Technology; and "Nutrition and Individual Well-Being" by P. C. Jeans, Professor of Pediatrics, The State University of Iowa.

Manuscripts were collected from the speakers and edited by Dr. Iago Galdston, Secretary of the Committee on Medicine and the Changing Order, to produce this most inspirational book.

So *You* Have Diabetes Too! By Vivian G. Lessell. Skokie, Illinois: The author, 8645 Laramie Ave., 1948. Paper. Pp. 55. Price $1.

Vivian G. Lessel has written, in a chatty, man-to-man style, a handbook for diabetics. Having been a diabetic patient herself for seventeen years, the author writes from personal experience on "Learning to Say 'No,' " "Taking the 'Ouch' Out of the Needle," "How a Spouse Can Help," "The Diabetic Child," " 'Do's' for Diabetics," "Insulin Reactions," and "The Bright Side of Diabetes."

The attractively made up booklet, with its bright red cover, is packed with a super-abundance of optimism. A great deal of the advice is sound. The emphasis placed upon developing and maintaining an optimistic and philosophic attitude toward the disease is splendid—until it gives way to an over-sentimentality that approaches the ridiculous. It is fine to play games, but there must be a stopping point reached before a good thing is carried too far.—*Mary H. Macomber.*

Selected High Altitude Recipes. By Lillian S. Kennedy. Denver: The Morey Mercantile Company, no date. Paper. Pp. 212. Price $1.

Members of the American Dietetic Association looking toward the Rocky Mountains and the 1949 convention in Denver may be interested in the cooking problems peculiar to high altitudes. Denver, as you know, is called the "mile-high city," for the state capitol is 5280 ft. above sea level.

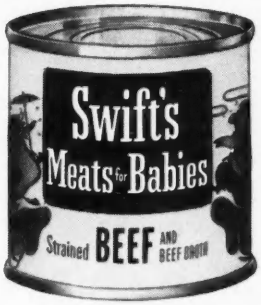
Home makers in this region and in other towns with even higher altitudes have all sorts of special facts to consider when baking, candy making, or boiling foods. Briefly, as the altitude increases and the atmospheric pressure decreases, water boils at lower temperatures because the pressure of resistance (surface tension) is less.

This little cook book with its beautifully colored illustrations is a handy guide for baking and cooking at high altitudes. It is, of course, a commercial publication with recipes calling for products of the publisher. Recipes are clear and easy to follow, however, and this reviewer has been using the book for household cooking with success for some time.

Many cooks, new to Denver, have a familiar, prized cake rise higher and higher and higher until it collapses. This little book would help avoid such a tragedy.—*Virginia Monahan Bayles, Instructor in Nutrition and Dietetics, University of Denver School of Nursing.*

Soft Diet trying your patients' patience?

— try palatable Swift's Strained Meats



6 varieties

Tempting, natural source of complete protein

The things some patients on soft, smooth diets have to eat! It's no wonder appetites lag.

To perk up patients' interest in food, many doctors now prescribe specially prepared Swift's Strained Meats when soft foods are indicated in a high-protein, low-residue diet. They help two ways. *One*, Swift's Strained Meats taste so good. Few patients can turn down real meat goodness. *Two*, an excellent source of B vitamins, Swift's Strained Meats help restore patients' natural appetite for all foods.

Originally prepared for infant feeding, Swift's Strained Meats are soft, smooth (may easily be used in tube-feeding), slightly salted—cooked to retain all their delicious meat flavor. Six kinds for variety: beef, lamb, pork, veal, liver, heart. Each one 100% meat, they provide an excellent, palatable source of complete, high-quality proteins, and hemapoietic iron. These meats make available *simultaneously* all known essential amino acids . . . for optimum protein synthesis. Convenient—Swift's Strained Meats are ready to heat and serve.

The makers of Swift's Strained Meats invite you to send for your copy of "The Importance of Protein Foods in Health and Disease"—a physician's handbook of protein feeding, written by a doctor. Send to:

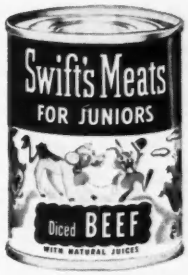
SWIFT & COMPANY

Chicago 9, Illinois

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

All nutritional statements in this advertisement are accepted by the Council on Foods and Nutrition of the American Medical Association.

For patients who can take foods of less fine consistency —Swift's Diced Meats offer tender morsels of nutritious meat with tempting flavors patients appreciate.



Current Literature

Contributed by Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital; Janet Engebretsen, Veterans Administration Hospital, Hines, Illinois; Quindara Oliver Dodge, Women's Educational and Industrial Union, Boston; and the Journal Staff.

AMERICAN JOURNAL OF THE DISEASES OF CHILDREN

Vol. 77, March, 1949

* Nephrosis in children. I. Observations on 84 patients. II. Clearance and saturation tests. E. Galan.—p. 328.

Nephrosis. A study of eighty-four patients in the last ten years was made in Cuba. Importance of bacterial infection in the causation, pathogenesis, and death rate of nephrotic children was emphasized. Clearance and saturation tests, cholesterol determinations, and other tests were performed regularly. Increased tubular reabsorption is stressed as a renal factor in the still not well-known pathogenesis of nephrotic edema.

THE AMERICAN JOURNAL OF SURGERY

Vol. 77, April, 1949

* Significance of dietary supplementation in surgical cases. J. L. De Courcy.—p. 461.

Dietary Supplementation in Surgical Cases. Most prospective surgical patients are nutritionally depleted. Their intake of nutrients may have been limited by anorexia, weakness, pain, nausea, vomiting, or gastrointestinal conditions; or digestion and absorption may have been deranged during a prolonged period. Probably the most common dietary deficiency is protein. In a study of sixty-six surgical cases, a special supplement was given containing a spray-dried mixture of whole milk, skim milk, dried brewers' yeast fortified with riboflavin concentrate, vitamins A and D, ascorbic acid, niacinamide, monosodium phosphate, and iron citrate. The milk ingredients were so formulated as to provide high-protein and low-fat content. The periods during which the dietary supplement was administered ranged from two weeks to three months. In fifteen cases, the dietary supplement was given daily during the pre-operative period. In thirteen of these cases, the patients were also given the supplement for two to three weeks post-operatively. In forty-two instances, the dietary supplement was administered post-operatively and during the convalescence. Nine patients were employed as controls. Blood determinations including hemoglobin values, red cell counts, differential white blood cell picture, and blood calcium values were done. Patients receiving dietary supplementation had smooth convalescence and exhibited gains in weight, strength, and appetite. The progress of the control group was definitely less satisfactory.

ANNALS OF INTERNAL MEDICINE

Vol. 30, March, 1949

* Prevention of recurrence in peptic ulcer. T. L. Althausen.—p. 544.
* Liver function and serum protein structure in gout. W. Q. Wolfson, C. C. Cohn, R. Levine, E. F. Rosenberg, and H. D. Hunt.—p. 598.
* Recent advances in the study of arteriosclerosis. S. O. Waife.—p. 635

Peptic Ulcer. Data reviewed show that 10 to 36 per cent of ulcer patients have a recurrence within the first six months following "medical cure"; 46 to 93 per cent have one or more recurrences in five years. In this study, there was little difference in type of patient (whether ward, private, or compensation) as to the recurrence. The outstanding causes are physical or mental fatigue, emotional disturbances, dietary indiscretions, and infections. Prevention of recurrent attacks begins with proper diagnosis and adequate medical treatment. The physician can prevent many further attacks if he treats and instructs patients thoroughly; if necessary, surgery may be indicated.

Gout. This study was planned to determine the frequency and pattern of hepatic abnormalities in gout. In sensitive liver function tests on forty-three patients, it was shown that gout is not uniformly associated with hepatic impairment. Diffuse liver disease can neither be the cause of gout nor the uniform consequence of it. Evidence now available suggests that diffuse hepatic involvement and alterations in circulating protein are not fundamental to the pathogenesis of gout.

Arteriosclerosis. This paper is a review of recent developments in the treatment of arteriosclerosis; all of the more important articles of the past three years are discussed. In addition to discussing the physiologic aspects, the author presents psychosomatic factors and cites experimental work being followed on cholesterol. It is felt that advance is slow but progressive and in the next decade great strides should be made by men who do not believe that arteriosclerosis is "the inevitable destiny of mankind."

ARCHIVES OF INTERNAL MEDICINE

Vol. 83, March, 1949

*Hepatic function during hypoproteinemia of renal disease. R. I. Boyd.—p. 298.

Hepatic Function. Evidence is well defined that the liver is involved in the formation of fibrinogen and prothrombin; formation of other protein fractions is questionable. In later stages of cirrhosis of the liver, it is known that the serum albumin concentration is less than normal. More pronounced decrease is seen in serum albumin of nephritic patients with edema. Therefore, this study of seventy-one individuals with nephritis was undertaken to determine the hepatic function. Impaired hepatic function in either edematous or non-edematous patients was not found.

BRITISH MEDICAL JOURNAL

No. 4602, April 2, 1949

* Effect of pressure cooking on vitamin C content of vegetables. G. M. Chappell and A. M. Hamilton.—p. 574.

Pressure Cooking and Ascorbic Acid in Vegetables. A comparison has been made of the effect upon the retention

TO A FLAVORFUL BREW...
COFFEE MADE IN TRI-SAVER URNS

This permanent stainless steel filter eliminates urn bags or filter paper — assures perfect filtration for finest coffee flavor.

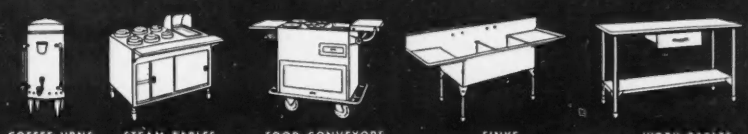
Here is your solution to the problem of making perfect coffee. The permanent stainless steel Tri-Saver filter extracts full flavor from the coffee you use. Tri-Saver filter's coffee-friendly stainless steel surfaces do not absorb essential flavoring matter—every ounce of goodness passes through the filter. No more spoiled batches due to torn filter paper or rancid urn bags. For that consistently clear, delicious brew — all evidence points to Tri-Saver, America's finest coffee urns.

THE TRI-SAVER STORY — Free

Colorful illustrated book gives convincing proof of Tri-Saver benefits. Describes single urns, batteries, twin, combination and institution urns—in capacities from 3 to 80 gallons.

S. BLICKMAN, INC., 4007 Gregory Ave., Weehawken, N. J.

Blickman-Built
FOOD SERVICE EQUIPMENT
EST 1889



of ascorbic acid in ten different vegetables when cooked in a modern pressure saucepan and in an ordinary saucepan according to recommended methods. In six vegetables—cauliflower, broccoli, winter cabbage, new carrots, turnips, and swedes—the retention was consistently better in pressure cooking. In spring cabbage, broad beans, old carrots, and spinach, pressure cooking gave a slightly higher retention in some experiments and a slightly lower retention in others. On the average, the retention was higher in vegetables cooked in the pressure cooker.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL

Vol. 84, April, 1949

* The effect of exercise on the renal mechanism of electrolyte excretion in normal subjects. A. A. Kattus, B. Sinclair-Smith, J. Genest, and E. V. Newman.—p. 344.
* The renal mechanism of electrolyte excretion and the metabolic balance of electrolytes and nitrogen in congestive cardiac failure: the effect of exercise, rest and aminophyllin. A. A. Kattus, B. Sinclair-Smith, J. Genest, and E. V. Newman.—p. 369.

Electrolyte Balance. Cardiac patients tend to excrete less salt than the normal person. Experiments on normal subjects were made to determine changes in electrolyte balance with varying amounts of excercise. Walking at 3 m.p.h. produced no alteration in glomerular filtration rate or serum sodium or potassium concentrations. Standing quietly has a slight sodium and chloride retaining effect; after mild excercise, both elements were retained for 37 min.

Electrolyte Balance in Cardiac Failure. Increased extracellular fluid in congestive heart failure has emphasized the importance of sodium excretion. Three cardiac patients were observed to note the effects of aminophyllin and mild exercise, and the effects of mild muscular excercise alone. The action of aminophyllin as a diuretic was demonstrated. When this drug was administered to a fully digitalized cardiac patient, there was little or no change in the glomerular filtration or the blood flow. In all three patients, mild excercise caused a retention of sodium chloride for 40 min. afterwards; the filtration rate was depressed in this period. Exercise was sometimes accompanied by decreases in glomerular filtration rate but constantly resulted in a decrease in the sodium clearance ratio. The decrease in sodium excreted persisted after return of the filtration rate to normal or to its pre-excercise level.

CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 40, March, 1949

* Efficacy of classroom teaching in nutrition. E. M. Esler and E. W. McHenry.—p. 104.

Classroom Teaching of Nutrition. In the teaching experiment described here, teachers in the selected school were asked to emphasize the following: (a) consumption of at least 2 pt. milk each day, (b) daily use of at least one-half orange, and (c) intake of 800 I.U. vitamin D daily. Nutritional posters, booklets, movies, and laboratory animals for use in instruction were provided. Emphasis was continued for six weeks. The results indicated that the experimental education did not have a marked effect upon the food habits of the pupils. There is a need for critical study of health education in classrooms, at least with respect to nutrition.

THE CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 60, April, 1949

* Nutrition in Newfoundland. W. R. Aykroyd, N. Jolliffe, O. H. Lowry, P. E. Moore, W. H. Sebrell, R. E. Shank, F. F. Tisdall, R. M. Wilder, and P. C. Zamecnik.—p. 329.
* Survey of food intakes of patients receiving routine ward diets in a general hospital. E. H. Bensley, G. E. Joron, and E. K. McDonald.—p. 384.

Food Intakes of Patients on Routine Hospital Diets. The caloric and protein intakes of seventy patients receiving routine ward diets were measured over a three-day period. The results showed that very low intakes may be encountered among such cases. Examples of conditions leading to low intakes are cited to illustrate the defects in routine nutritional care which may be revealed by such surveys. Emphasis is given to the role of the doctor in maintaining adequate standards of feeding patients.

JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 178, April, 1949

* Studies on the heat inactivation of methionine in soy bean oil meal. R. J. Evans and H. A. Butts.—p. 543.
* The effect of pteroylglutamic acid and related compounds upon tyrosine metabolism in the scorbutic guinea pig. C. W. Woodruff, M. E. Cherrington, A. K. S. Stockell, and W. J. Darby.—p. 861.

Heat Inactivation of Methionine. No destruction of the methionine contained in soy bean protein occurred when soy bean oil meal, soy bean protein, or soy bean protein plus sucrose, glucose, dextrin, or soy bean oil was autoclaved for 4 hr. at 15 lb. pressure. A small amount was destroyed when the protein was autoclaved with agar-agar or gum arabic. None of the *dl*-methionine mixed with soy bean protein was destroyed, but 24 to 79 per cent of that mixed with soy bean oil meal, sucrose, or the protein plus one of the carbohydrates or soy bean oil was destroyed.

The Effect of Pteroylglutamic Acid upon Tyrosine Metabolism. Evidence is presented that pteroylglutamic acid will both prevent and abolish the hydroxyphenyluria seen in guinea pigs fed diets containing large amounts of tyrosine and devoid of ascorbic acid. The hydroxyphenyluria produced in guinea pigs fed scorbutigenic diets containing 5 per cent *l*-tyrosine is prevented by both pteroylglutamic acid and a related compound as well as by ascorbic acid. These pteroylglutamates do not protect the guinea pig against scurvy. Possible interrelationships between the metabolic roles of pteroylglutamic acid and ascorbic acid are discussed.

THE NEW ENGLAND JOURNAL OF MEDICINE

Vol. 240, March 31, 1949

* Serum potassium levels in diabetic coma. R. H. Sinden, J. L. Tullis, and H. F. Root.—p. 502.

Serum Potassium Levels in Diabetic Coma. In most cases of diabetic coma, it is possible to start giving food to the patient 6 to 12 hr. after recovery. The first foods given are oatmeal gruel and orange juice which contain potassium in good quantity. If the patient remains unconscious for 24 to 48 hr., intravenous feedings of glucose are necessary. In such patients, the danger of hypopotassemia must be kept constantly in mind.

PUBLIC HEALTH REPORTS

Vol. 64, April 22, 1949

* Q fever studies in Southern California. III. Effects of pasteurization on survival of C. *burneti* in naturally infected milk. R. J. Heubner, W. L. Jellison, M. D. Beck, and F. P. Wilcox.—p. 499.

Milk and Q Fever. In these studies on the transmission of Q fever, infected milk after pasteurization was rendered free of infection, although the same milk in the raw state was shown in each instance to be highly infectious.

SCIENCE

Vol. 109, April 1, 1949

* The effect of pteroylglutamic acid on the aromatic amino acid metabolism of premature infants. C. D. Govan and H. H. Gordon.—p. 333.
* Seven decades of nutrition research. C. A. Elvehjem.—p. 354.

MEAT...
And This Protein Era

"Today we are in the protein era."* This terse but meaningful statement, made by an outstanding authority in a recent review on the progress of nutrition, reflects an accomplishment of utmost significance.

This résumé of modern nutrition concepts shows convincingly that the recognition of the vital role of protein in health and disease ranks among the great advances of medicine.

The therapeutic use of a high protein dietary has revolutionized the prognostic outlook in many hepatic diseases formerly considered resistant to treatment.

The use of high protein dietaries has resulted in a gratifying reduction of surgical morbidity and mortality, made possible by systematic presurgical nutritional build-up of the patient. Through this same approach, wound healing and general recovery are greatly promoted.

In nephritis and nephrosis, at one time considered absolute contraindications for animal protein in the dietary, the use of protein in liberal amounts can significantly reduce mortality and decidedly improve the clinical condition.

The benefits derived from high-protein nutrition in pregnancy and lactation are diversified and far-reaching, embracing both mother and offspring. For this reason, a generous extra serving of meat, given daily as a routine measure, has been strongly recommended as a means of improving the health of mother and child.

Meat is rightfully regarded as an outstanding protein source. It is notably rich in protein. The protein of meat is biologically complete, capable of satisfying all protein needs of the body from childhood to old age. And, particularly important in disease, the excellent digestibility of meat gives virtual assurance that its protein and other valuable nutrients become available for utilization.

*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. *139*:897 (April 2) 1949.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

American Meat Institute

Main Office, Chicago...Members Throughout the United States

The Effect of Pteroylglutamic Acid on the Aromatic Amino Acid Metabolism of Premature Infants. Pteroylglutamic acid was given to ten premature infants fed a cow's milk mixture containing 6 gm. protein and 120 calories per kilogram of body weight per day, but no ascorbic acid. All ten infants excreted significant amounts of "tyrosyl" before administration of pteroylglutamic acid. Four of the infants, when given pteroylglutamic acid daily for seven days, produced a striking decrease in "tyrosyl" excretion. For the remaining six infants, pteroylglutamic acid was ineffective whether given orally or by gavage daily. In five of the six infants for whom pteroylglutamic acid was ineffective and who were given ascorbic acid, there was a prompt decrease in excretion of hydroxyphenyl derivatives.

Seven Decades of Nutrition Research. A composite picture of the development of nutrition research is presented. The point is made that in spite of the tremendous advances in the science of nutrition and in food technology, the world food problem today is still one of total calories. On the other hand, in areas like the U. S. where caloric undernutrition has been comparatively rare for many years, there appears to be some correlation between the increased incidence of degenerative diseases and high caloric intake. Efforts are under way to control food intake to a limited extent.

BAKERS' HELPER

Vol. 91, March 19, 1949

*Using liquid sugars in the bakery. O. L. McGee.—p. 122.

Vol. 91, April 2, 1949

Orienting new employees.—p. 54.

Vol. 91, April 16, 1949

Bread standards—testimony on "softeners" continues.—p. 62.
Newfoundland health survey measures benefits of improved diet.—p. 80.

Liquid Sugar. Questions concerning the use of liquid sugars are answered. There are no disadvantages in using liquid sugar, if it is used properly. The majority of liquid sugars are as sweet as other sugars, although some may contain much more moisture. Liquid sugars are cheaper, more economical, free from contamination, and help to streamline production. These sugars are used with other sugar in yeast products or for frostings and icings.

BUILDINGS

Vol. 49, April, 1949

* Basic facts you should remember when selecting cleaning materials.—p. 26.
Basic facts about disinfectants.—p. 30.
* How efficient is your cleaning?—p. 44.
New improvements make mechanized wall washing easier, more efficient. W. H. Cravis.—p. 50.
* Know your floors to know their maintenance. R. H. Jarden.—p. 52.

Cleaning Materials. Basic qualities, ingredients, and uses of soap powders, scouring powders, oil soaps, toilet soaps, alkaline cleaners, miscellaneous cleaners such as carpet and upholstery cleaners, wallpaper cleaners, and furniture polishes are given in order to help in the intelligent selection of products.

Man-Hour Chart. The man-hour cleaning chart is industry's best gauge of relative cleaning efficiencies and one of the quickest and most accurate means of checking cleaning performances, which in terms of man-hours should be .56 hr. per square foot per year for a well-cleaned building. The chart, specifying exactly what work is to be done, how often it is to be done, and how long it takes, is only a guide and not an accurate statement of what should be done in any particular property.

Floor Maintenance. Differences in types of floors govern the selection of cleaning materials and procedures. Maintenance tips for the most common floor finishes are given. These include asphalt tile, linoleum and linotile, rubber and rubber tile, wood, and cork.

HOSPITALS

Vol. 23, April, 1949

* How small hospitals improved the dietary service. G. M. Piper.—p. 77.

How Small Hospitals Improved Dietary Service. The three main problems encountered in the dietary consultation service for private child-caring and maternity homes, tuberculosis sanatoriums, and small hospitals are the planning of adequate meals, the organization of kitchen work for greater efficiency, and the cutting of food costs. In dealing with the problem of planning adequate meals for an institution, the nutritional needs of the group must be known; then a menu pattern to be used as a guide for writing menus can be devised. Since rating or scores often challenge one to greater effort, a menu score cord was devised to check written menus for the basic food needs. The second major problem—that of more efficient organization of the kitchen work—is not easy to solve. It requires concentrated effort and considerable time to plan and set up work schedules. To cut food costs, the following suggestions are made: (a) Use recipes which have been tested and found to give consistently good results. (b) Obtain the desired number of portions for a given amount of prepared food. (c) Keep a record of food costs which covers the price of food delivered to the kitchen, either from the storeroom or by direct purchase. (d) Keep a record of the number of meals served in order to learn per capita food cost. Illustrations of the menu score card and the meal pattern are included.

INSTITUTIONS

Vol. 24, April, 1949

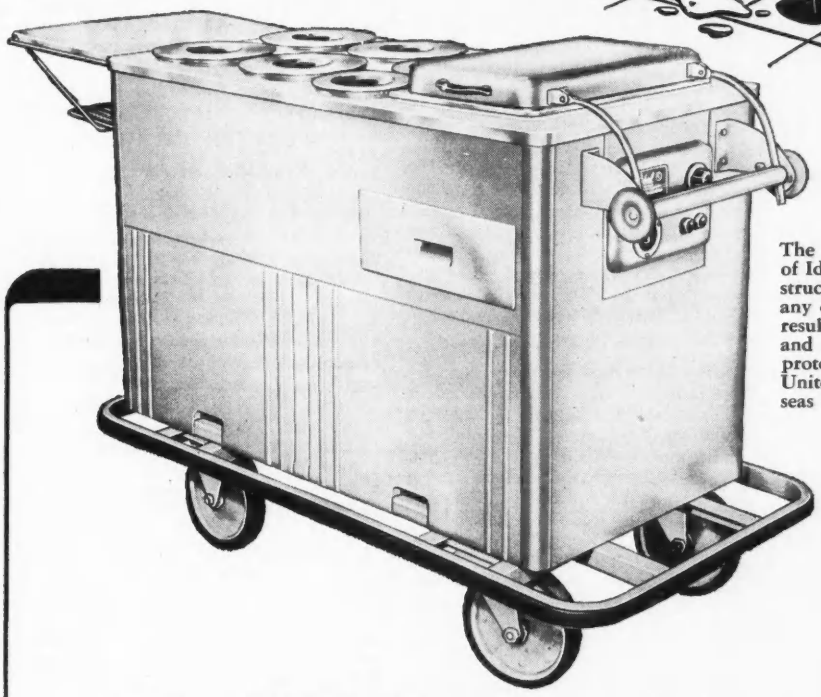
* Curtain time: here's 'how to,' 'how not to' handle interview.—p. 2.
* Charlie's Cafe Exceptionale displays winning attributes.—p. 42.
Banish noise troubles with science and art of acoustics.—p. 64.
* Anything for dessert as long as it's pie.—p. 74.

How To Interview. A strip film on how to interview job seekers and how not to has been prepared by one of the hotel administration classes at Cornell University. The script for the film is reproduced in the article. The points stressed in the "how to" section are that the interviewer has three objectives in mind: to gain information, to give information, and to make a friend. He attempts to discount his own attitudes and personal prejudices and attempts to encourage the applicant to tell about himself, rather than employing a direct cross-examination type of interview.

Exceptional Restaurant in Minneapolis. A restaurant in Minneapolis which serves 68,000 meals per month and employs 250 persons is described. The restaurant is open from 11:30 a.m. to 1 a.m. Kitchen planning has resulted in a working area which stresses smooth flow through the kitchen and serves special needs arising through specific menu items served by this restaurant. One food handler works at a reach-in refrigerator to keep a revolving hors d'oeuvre table in the dining room constantly refilled. One oven is exclusively devoted to baking popovers. One range is used only for baking melted cheese casserole dishes. A centrally located checker controls the traffic pattern for the seven dining areas. Beverage service is located in the service hall and is not intermixed with the food service. Refuse is disposed of from the dishwashing unit to the basement and does not pass through the kitchen. Militaristic inspections of all employees are held daily to maintain sanitation and cleanliness standards.

Pie Ideas. Two pages of illustrations give the menu writer many ideas for interesting new pies and unusual variations of the old favorites such as apple, cherry, and cream pies.

Sure... you can turn the hose on it.



They are Patented

The many valuable advantages of Ideal special design and construction cannot be found in any other unit. These priceless results of Ideal research, study and long experience are fully protected by patents in the United States, Canada and overseas countries.

Hospital standards of sanitation and cleanness are designed and built right into every Ideal Food Conveyor. Though we don't advocate it, you can use a hose or a steam jet on any Ideal with little concern about damage. Heating elements, control devices are well protected by Ideal methods of assembling top deck and food wells.

Cleaning an Ideal is a quick and easy task, too. Sheer, unobstructed surfaces, rounded corners, seamless heavy gauge utensils — an utter absence of any dirt catchers or hard-to-clean places make Ideals popular with hard-to-keep help. Utensil covers are die drawn reinforced stainless steel plug-type. They are easily cleaned — hard to damage.

Ideal labor-saving cleanness is available in many models, sizes and materials. You can select an Ideal to exactly fit both budget and service needs. Write for catalog and specification data.

THE SWARTZBAUGH MFG. COMPANY : TOLEDO 6, OHIO

ESTABLISHED 1884

Distributed by The Colson Corporation, Elyria, Ohio ; The Colson Equipment and Supply Company, Los Angeles and San Francisco. *In Canada:* Canadian Fairbanks-Morse Company.

Ideal

FOOD CONVEYOR SYSTEM

Found in Foremost Hospitals

News Notes

New Assistant Director-General of WHO. Dr. Martha M. Eliot, formerly Associate Chief, U. S. Children's Bureau has resigned, effective June 1, to become Assistant Director-General of the World Health Organization. She had been associated with the Children's Bureau for twenty-five years. In her new position she will be responsible for the work of the Department of Operations, which includes the furnishing of experts, demonstration teams, and fellowships in the worldwide campaigns against malaria, tuberculosis, and venereal disease control as well as furthering maternal and child health nutrition and environmental sanitation. Dr. Eliot was U. S. Delegate to the World Health Organization in 1948.

State Department Sends Dietitian to Sweden. Ethel Austin Martin, Director, Nutrition Service, National Dairy Council, has been selected by the State Department to be a U. S. delegate at the 12th International Dairy Congress to be held in Stockholm, Sweden, from August 15 to 19. In addition, she has been named as a general reporter for sections dealing with "Economics and Trade" and "The Food Value of Milk and Dairy Products for Human Consumption." Before returning, Mrs. Martin plans to attend the 7th International Congress of Home Economics, August 22 to 27, also to be held in Stockholm.

Budget Bureau Seeks Dietitian's Advice. On March 1 in Washington, the Bureau of the Budget of the Treasury Department held a special inter-agency meeting to consider the problems of cost reporting in federal hospitals. It was attended by "top level" federal hospital administrative personnel. Cost reports of the dietary department were discussed by Kathryn A. McHenry, who presented a paper on "Use of Cost Reports in Food Management." Among those who participated in the discussion which followed Miss McHenry's paper were: Lt. Col. F. H. Gibbs, Office of the Surgeon General, U. S. Army; Dr. H. A. Press, Division of Management and Planning, Veterans Administration Central Office; and Joseph S. Murtaugh, Hospital Division, U. S. Public Health Service.

American Institute of Nutrition. At the Detroit meeting of the Federation of American Societies for Experimental Biology held in April, the following officers of the American Institute of Nutrition were elected: President, Dr. Charles Glen King, Scientific Director, Nutrition Foundation, Inc.; Vice-President, Wendell H. Griffith, Professor of Biochemistry and Nutrition, University of Texas Medical School; Secretary, J. H. Roe, Professor of Biochemistry, George Washington University Medical School; and Treasurer, N. R. Ellis, Assistant Chief, Animal Husbandry Division, U. S. Department of Agriculture.

Dr. Frederick Tisdall. Workers in the field of nutrition and dietetics have been saddened to learn of the death of Dr. Frederick Tisdall, for many years on the faculty of the University of Toronto. Dr. Tisdall had been a member of the Food and Nutrition Board of the National Research Council for several years and was well known for the contributions to the field of nutrition which he had made through his research work.

Mary A. Lindsley. Word has been received in the JOURNAL office of the death on May 21 of Mary Augusta Lindsley in Morristown, New Jersey. Miss Lindsley was a life member of A.D.A. and had been a pioneer in the field of dietetics since before the first World War, when she went overseas and served as a dietitian in France. She was Managing Director of the Grace Dodge Hotel, now known as the Dodge Hotel, in Washington from 1919 to 1936, when she became manager of the Williamsburg Inn, Williamsburg, Virginia, at the time of its restoration. During World War II, although retired, Miss Lindsley helped to plan the dietetic training of Red Cross canteen workers who were sent overseas.

Community Nutrition Institute. For the third year, the College of Home Economics, Syracuse University, and the New York State Department of Health are conducting a two-week in-service course in public health nutrition from July 5 through 16. The curriculum as planned will include discussion of such subjects as:

"What Does the Community Expect of the Nutritionist?"
"Nutrition Surveys with Special Emphasis on Nutrition Histories"
"Role of Emotions in the Maintenance of Health"
"Group Dynamics"
"Method of Teaching Nutrition to Children"
"Advances in the Role of Fat and Carbohydrate in Nutrition"
"Protein Metabolism"
"Obesity"

Dietetic Interns Graduate. On June 28, six dietetic interns completed their training in the administrative internship at *Aetna Life Affiliated Companies*, Hartford, Connecticut. They are: Glenna Cady, University of Massachusetts; Marilyn Canfield, Purdue University; Betsy Cole, Woman's College, University of North Carolina; Elizabeth Fraser, Indiana University; Phyllis Griffin, University of Massachusetts; and Jeanne Quinlan, Simmons College.

In St. Paul, at *Ancker Hospital*, seven dietetic interns completed their internships this spring. They are: M. Joan Georg, Kansas State College; Ruth Ann Henkel, Iowa State College; Bonnie Kirkberg, University of Colorado; Catherine M. Leasman, University of Minnesota; Shirley M. McCarthy, College of St. Scholastica; Louise M. Metzger, College of St. Benedict's; Betty L. Morsen, Marymount College.

New Dental Film. The Southern California State Dental Association has prepared and is selling a new, 18 min., black and white, 16 mm., sound film, on dental health, titled "It's Your Health." The script covers the subjects of mouth hygiene, dental care, and the role food plays in protecting dental health. The price of the film is $75. It may be ordered from the Southern California State Dental Association, 903 Crenshaw Boulevard, Los Angeles.

Plentiful Foods. The Department of Agriculture expects the following foods to be plentiful during July:

Fresh fruits and vegetables

Cabbage (East and Midwest)
Potatoes, Irish
Plums

Miscellaneous Foods

Apricots, canned
Beans, dried
Chickens—broilers, fryers, and hens
Corn, canned
Cottage cheese
Fish—fresh and frozen
Honey
Mixed fruits, canned
Peaches, canned
Peanut butter
Peas, dried

It is suggested that fish, both fresh and frozen, and cabbage in the East and Midwest be given special stress.

Errata. The JOURNAL regrets two errors which appeared in the March issue in the paper titled, "Comparison of Some Nutrients and Yield of Four Varieties of

Army Announcements Concerning Personnel

Second Lieutenant Annie R. Lanford, R-2474, previously separated from the service, has been recalled to active duty.

Elizabeth C. Adams, R-2548, has been appointed in the Women's Medical Specialist Corps Reserve.

Setting New Standards

HOSPITAL TABLEWARE

Designed with the Advice and Cooperation of Dietitians, Nurses, Doctors, Hospital Administrators

The Devine Ware coffee cup with non-slip top or bottom-fitting saucer and stacking cover is a triumph of engineering convenience. Heavy duty Devine Ware comes in 6 Aztec colors and 6 Pastel shades.

Proved by year-round use in many of the world's largest plastic tableware installations . . . Devine Ware *Sets New Standards*—offers many exclusive advantages for both table and tray service as well as storing foods in hospitals, schools and public restaurants.

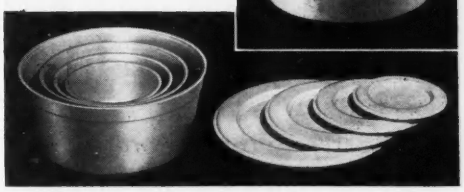
Yes—tasteless! Totally without odor!
Yes—withstands boiling heat! Made of heavily reinforced Melmac.

And here's a new one . . . *positive air circulation.* So engineered that while it stacks in one-third the ordinary space, patented contact points provide free air circulation, and negative bacteria count.

Also, low heat conduction keeps foods warm—or cold—throughout the meal . . . minimizes dish clatter . . . dries all surfaces rapidly without water spots or rings. So light, compact, quiet and easy to handle—Devine Ware enormously reduces the work of handling kitchen, dining room, and tray service.

Hospital dietitians are delighted with the beauty, economy, sanitary quality, convenience, durability and exclusive features of Devine Ware. It is in regular use at hundreds of hospitals, universities, schools, hotels, and government institutions. Continuity of supply insured because all Devine Ware items are molded in tremendous quantities by General Electric for Devine.

Devine Ware is a *complete line*, including scores of convenient special shapes and sizes, including close fitting containers like this Foursome Bowl Set with Covers—1 pint, 1 quart, 2 quarts, 4 quarts.



This picture shows the Devine Ware Foursome Dinner Set—20 pieces—and the safe-shipping, close-fitting carton in which it is packed.

WRITE TODAY FOR PRICE LIST AND BEAUTIFUL ILLUSTRATED CATALOG

Special Introductory Offer

Use coupon for famous Devine Ware "Foursomes."

DEVINE FOODS, INC.
1500 S. Western Ave., Chicago 8, Ill.

Gentlemen: Please ship me the following Devine Ware immediately:

Send——Foursome Dining Sets, Pastel Green
Send——Foursome Dining Sets, Pastel Yellow
List Price $15 less 25% or $11.25 each Postpaid

Send——Foursome Bowl Sets with Covers, assorted Aztec Colors
List Price $12 less 25% or $9.00 each Postpaid

ENCLOSED IS CHECK/M.O. for $_____

Name_____

Hospital_____

Address_____

City_____ State_____

Your dealer's name_____

DEVINE WARE

Pioneered and Engineered by Devine
Molded by GENERAL ELECTRIC for
DEVINE FOODS, INC., 1500 S. Western Ave., Chicago

THE ORIGINAL and ONLY COMPLETE LINE of HEAVY-DUTY PLASTIC TABLEWARE . . .

Turnip Greens." On page 233, the heading of the first column should have been "Factor Compared" rather than "Item Compared," and on page 234, in the last line of the first column, the words "maximum, minimum, and average," should have been deleted.

News of State Associations

Alabama Dietetic Association. As part of its vocational guidance work, the Alabama Dietetic Association distributed copies of "Double Feature" to 150 high school students who were guests of the Home Economics Department of the University of Alabama for a week-end field trip.

Lenna Cooper of Oxford, Mississippi, was a guest of the *Tuscaloosa Dietetic Association* on May 8. She gave an informative talk on the founding of the A.D.A.

Arkansas Dietetic Association. On May 16, the Arkansas Dietetic Association held its annual meeting at Little Rock in conjunction with the Arkansas Hospital Association, nurse anesthetists, hospital librarians, and laboratory technicians.

Governor Sidney S. McMath had proclaimed May 9 through 16 as Arkansas Dietetic Week and urged girls to consider dietetics as a profession. Radio and newspaper announcements and store window placards were used to publicize the proclamation. At the meeting, Elizabeth Perry, A.D.A. President-Elect and the national Association's representative, was presented with an "Arkansas Traveler's Certificate" by Mrs. Henry Bethel, the official representative of the governor.

The program included the following talks:

"Making the Job Easier for Your Dietitian" by Elizabeth Perry

"The Newspaper and the Hospital" by Carroll McGaughey of the *Arkansas Gazette*, Little Rock

"Color and Attractiveness in Food" by Mrs. Merlin Moore, The Moores' Cafeterias, Little Rock

"My Idea of a Dietitian in a Neuropsychiatric Hospital" by Dr. W. P. Kolb, Veterans Administration, Fort Roots, North Little Rock

New officers elected at the meeting are: President-Elect, Geraldine Waggener, Consultant Dietitian, U. S. Public Health Service, Little Rock; and Treasurer, Mary Tatum, Davis Hospital, Pine Bluff.

Colorado Dietetic Association. On May 28 and 29, the Colorado Dietetic Association met at the Colorado Medical School, Denver. The program included addresses by Dr. Weglius, Virginia Beal, and Dr. Gladys Kinsman Lewis. Miss Beal spoke on "Child Research," while Dr. Lewis' topic was "New Trends in Nutrition."

The Colorado Association last fall became a member of the Colorado Council of Women's Organizations, which acts as a clearing house for women's organizations on the community level, co-ordinating and integrating their activities for the community at large.

Connecticut Dietetic Association. The annual spring meeting of the Connecticut Dietetic Association was held at Hartford Hospital, Hartford, on May 3. Preceding the luncheon, groups toured the State Health Department, the Dairy and Food Councils, the Aetna Life Insurance Company cafeteria, and the West Hartford school cafeterias.

In the afternoon, Dr. John C. Leonard, Director of Education, Hartford Hospital, welcomed the Association, after which Gladys E. Hall, A.D.A. Executive Secretary, discussed "Our Part in the A.D.A. Program." Following her talk, the movie, "Footsteps to the Future," and the A.D.A. slides, "Dietetics—The Career with a Choice," were shown. The meeting closed with a tour of the Hartford Hospital Dietary Department.

Among the guests at this meeting were several high school girls and high school guidance directors.

Florida Dietetic Association. At the executive board meeting of the Florida Dietetic Association held on March 26 and 27, it was decided that the Association unite with the Florida Home Economics Association in a joint professional education and vocational guidance program. Plans were also discussed for the October meeting of the Association to be held at Wakulla Lodge. The theme for this convention will be "Dietitians Help

Michigan State College Union Building Cafeteria

1947 . . . 1948 . . . 1949

VAN clients in "vanguard"

● Yearly Grand Award winners in INSTITUTIONS Magazine competitions confirm Van's ability to design and provide finest food service equipment.

● The awards from the start evidenced capacity to serve any kind of establishment . . . 1947 Grand Award to Mills Restaurant, Cincinnati . . . 1948 to Hotel Roanoke, Virginia . . . and 1949 Michigan State College.

● If you are planning food service equipment improvements, Van will be glad to share with you its century of experience.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

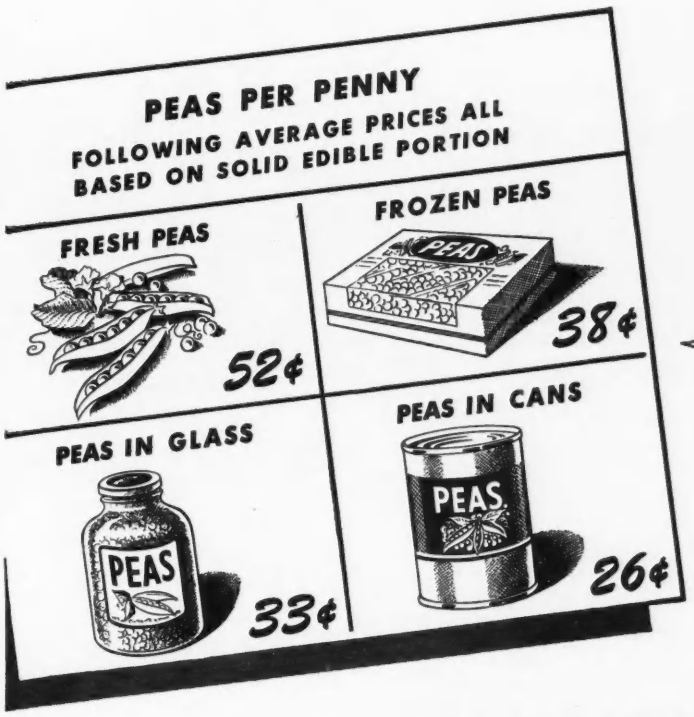
Branches in Principal Cities

341 EGGLESTON AVENUE CINCINNATI 2, OHIO

Good Eating at Less Cost!

*Full-year field check by 19 Universities**

establishes significant data on food costs. Study compares COSTS AND AVAILABILITY of 12 commonly used Fruits and Vegetables in their four marketable forms—Fresh, Frozen, in Glass and in Cans.



In these days of high prices, don't people seeking your guidance constantly ask: "How can I get more food value for my food dollar?"

19 leading American universities sought the answer in a 12-months' research project — October, 1946 through September, 1947. The results of this comprehensive study on the 12 fruits and vegetables boil down to this: *Penny for penny, canned foods in general give consumers more food for their money, as well as more nutritional values. Most foods in cans cost less than the same foods in glass—less than fresh foods—and far less than frozen foods.* For example, study the "Peas per Penny" chart at left.

WINNING COMBINATION

As you know, no matter how good a particular food may be nutritionally, if it is not readily available, or if the price is high—that food is of very little practical value. Therefore, the known nutritional values of food in cans, plus the *high* percentage of year-round availability and the *low* cost of canned foods in general, are a winning combination.

SOUND RECOMMENDATION

Results of this pioneering coast-to-coast research again demonstrate how important canned foods are in relation to improved national nutrition. Their variety, their convenience for storage and use in the home, together with their availability and economy, constitute a sound basis, we believe, for your recommending this solution to today's high cost of living.

FREE *booklet giving full details of Comparative Cost and Availability Study.*

*For full details see "Comparative Cost and Availability of Canned, Glassed, Frozen, and Fresh Fruits and Vegetables" in the April issue of the *Journal of the American Dietetic Assn.*

CAN MANUFACTURERS INSTITUTE, INC.
60 East 42nd Street, New York 17, N. Y.

Please send me, free of charge, ____ copies of the new booklet entitled: "Canned Foods in the Economic Spotlight."

E

Name_____

Address_____

City_____ Zone____ State_____

to Meet Florida Health and Nutrition Needs."

Georgia Dietetic Association. The Georgia Dietetic Association's annual spring meeting was held on May 4 at the Veterans Administration Hospital, Augusta. Grace Bulman, A.D.A. Vice-President, was the national Association's representative and discussed activities of the Association. Other talks on the program were:

"What's Cookin' in Cooking Equipment" by John J. Bourke, Director, Commercial Gas Promotion, American Gas Association, New York City

"Food Service in Neuropsychiatric Hospitals" by Dr. C. C. Odom, Manager, Veterans Administration Hospital, Augusta

"The Nicotinic Acid-Tryptophan Relationship in Nutrition" by Dr. S. A. Singal, Associate Professor of Biochemistry, University of Georgia Medical School, Augusta

"Ocular and Blood Changes in Nutritional Deficiencies in the Rat" by Dr. W. K. Hall, Associate Professor of Biochemistry, University of Georgia Medical School, Augusta

"Renal Factors in Cardiac Edema" by Dr. A. P. Briggs, Professor Biochemistry and Department of Medicine, University of Georgia Medical School, Augusta

New officers elected at the meeting are: President, Gertrude McDonald, Atlanta; President-Elect, Margaret Richardson, Atlanta; Vice-President, Nell Wier, Savannah; Secretary, Priscilla Reynolds, Atlanta; and Treasurer, Maybess Cone, Emory.

Iowa Dietetic Association. The annual spring meeting of the Iowa Dietetic Association took place in Des Moines on May 18. The program included the following papers:

"Giving our Food the New Look" by Mary H. Riste, Butterworth Hospital, Grand Rapids, Michigan

"New Trends in Gastrointestinal Surgery" by Dr. Louis T. Columbo, Chief of Surgery, Veterans Administration Hospital, Des Moines

"Maintenance of Sanitary Conditions in Institutional Kitchens" by Robert C. Hanlon, Director of Hospital Division State Department of Health, Des Moines.

Dr. Ercel S. Eppright, Chairman, A.D.A. Professional Education Section, represented the national Association at this meeting.

Kansas-Missouri Dietetic Associations. At the Mid-West Hospital Convention held April 26 through 28 in Kansas City, Missouri, the Kansas and Missouri Dietetic Associations exhibited a booth which pointed up formula techniques. Two leaflets were distributed: "Why Terminal Sterilization" which was prepared by the Kansas City Dietetic Association and "Formula Directors" which was the work of the Kansas Dietetic Association. The exhibit showed equipment used in formula making in the home and displayed literature on terminal sterilization in the hospital.

Maryland Dietetic Association. On May 7, the annual meeting of the Maryland Dietetic Association was held in Baltimore. At the luncheon, Dr. Mildred Otenasek, Associate Professor of Economics and Political Science, Trinity College, Washington, D. C., spoke on "A Woman Looks at the World."

In the afternoon, a panel discussion on "Medical Care Programs in Maryland" was presented by discussants from the state and city boards of health and from Johns Hopkins Hospital. The day's sessions closed with a symposium on the "Design of Institutional Equipment" with speakers representing the manufacturer, the sanitarian, and the engineer.

New officers elected are: President, Sybil Bangs, West Baltimore General Hospital; President-Elect, Kathren Shull, Assistant Supervisor of Public School Cafeterias, Baltimore; Vice-President, Alma Bering, Shepard-Enoch Pratt Hospital; and Treasurer, Colleen Hambleton, West Baltimore General Hospital.

Minnesota Dietetic Association. The Minnesota Dietetic Association held its second meeting of the year in affiliation with the Upper Midwest Hospital Conference on May 26 and 27. The meeting was held in Minneapolis. The dietetic portion of the program included papers on the following topics:

"Nutritional Status of People in Newfoundland" by Dr. Russell M. Wilder, Mayo Clinic, Rochester

"Public Relations and the American Dietetic Association" by Dr. Margaret Ohlson, A.D.A. Secretary

"Nursing Education and the Dietary Department" by Helen Schwarz, Executive Secretary, Minnesota State Board of Nursing Examiners

Workshops were also held on the second day of the meeting on "Food Cost Control," "Visiting the Patient," "Our Diabetic Patients," and "Buying Canned Fruits and Vegetables."

The first meeting of the year was held last fall at the College of Saint Theresa, Winona, on November 6. The speakers and their subjects were: Dr. Howard Odel, Mayo Clinic, "Dietary Management of Cardio-Renal Disease"; Dr. John M. Berkman, Mayo Clinic, "Anorexia Nervosa"; and Lenora Sullivan, Iowa State College, "Discussion and Demonstration of the Master Mix." At the luncheon, the dietetic interns at St. Marys Hospital, Rochester, modeled uniforms from a shop in Rochester. The dinner speaker was Dr. Ercel S. Eppright Professor of Nutrition, Iowa State College, who talked on "Food Habits."

Mississippi Dietetic Association. The spring meeting of the Mississippi Dietetic Association took place in connection with the Southeastern Conference of Dietitians at Biloxi on April 28 and 29. Dr. Malcolm MacEachern, American College of Surgeons, spoke on "The Dietitian's Role in the Training of the Hospital Administra-

Free Help in Planning

ALLERGY DIETS

Wheat Free—Egg Free—Milk Free

"C-D" ALLERGY PRODUCTS

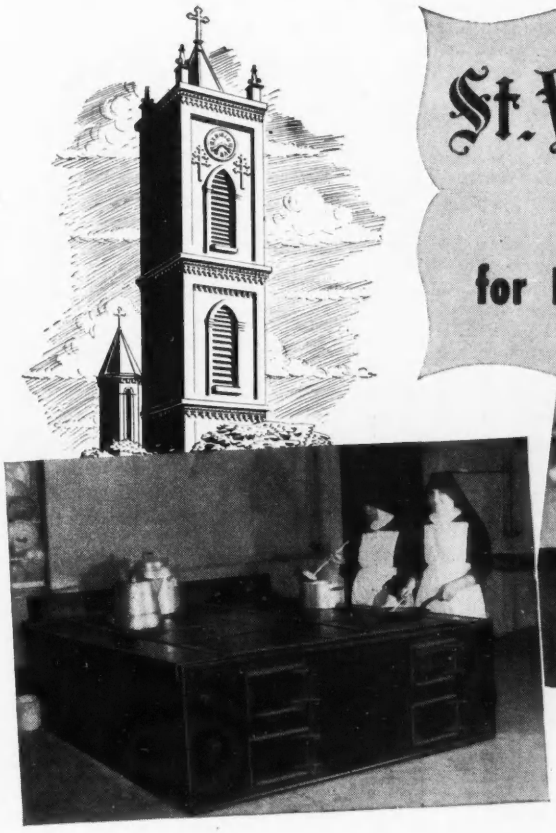
For best results, specify "C-D" Allergy Products for your diets. They're carefully guarded to prevent contamination by probable allergens. They offer tasty variety—Barley, Corn, Rice, Potato, Rye, Soy Bean and others. You can depend on them.

SEND FOR FREE BOOKLET OF RECIPES

Send for "C-D" Allergy Booklet showing lists of foods allowed, foods proscribed, and over 50 easy-to-make recipes.

CELLU Dietary Foods

CHICAGO DIETETIC SUPPLY HOUSE Inc.
1750 West Van Buren Street Chicago 12, Illinois



St. Vincent's College SELECTS GAS for KITCHEN MODERNIZATION

Century-old "hot-top" replaced by modern Gas-fired stainless steel cooking tools

Kitchen Equipment furnished by Bernard Gloekler Corp., Pittsburgh

TRADITIONS of good food remain unchanged, but preparation and service have been streamlined by the installation of GAS and modern Gas Cooking Tools at this famous Benedictine Archabbey and College.

To provide for 200 Monks and a resident student body of 800, the staff of 34 European Nuns is responsible for preparing more than 3000 meals daily. In this volume cooking operation the stainless steel Gas Equipment offers many time-saving and work-saving advantages.

But equally important are the time-proved features of GAS which make it the ideal fuel for roasting, broiling, deep-fat frying, baking. At St. Vincent's bread-baking is a regular and important function for which 2500 bushels of wheat are required annually.

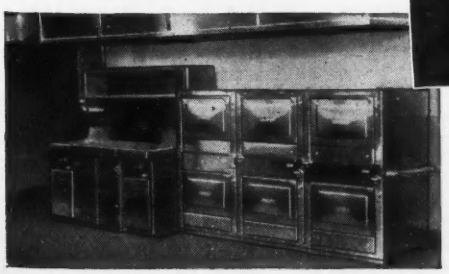
This same automatic control feature also permits the slow-roasting of meats to prevent shrinkage and retain all essential juices. But GAS can also be used for speed-cooking, and for the exact temperatures required in deep-fat frying of many kinds of food.

The GAS installation at this well-known Archabbey and College, located near Latrobe, Pennsylvania, has demonstrated the economy and efficiency of GAS and modern Gas Equipment. Call your local Gas Company and check the economies of volume cooking with GAS.

AMERICAN GAS ASSOCIATION

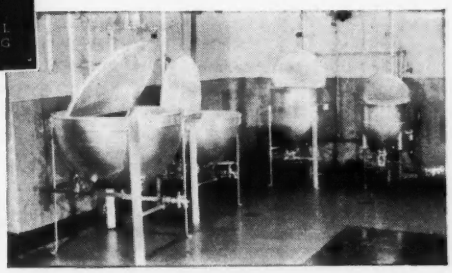
MORE AND MORE... THE TREND IS TO GAS FOR ALL COMMERCIAL COOKING

420 LEXINGTON AVENUE
NEW YORK 17, N. Y.



Bank of Gas-fired stainless steel ovens and deep-fat frying unit

Gas-fired steam kettles and stock kettles



tive Intern," and Kenneth Williamson, American Hospital Association, gave a talk on public relations titled "The Hospital Task Force." At another session, Lenna F. Cooper talked on "What's New in Dietetics," and Lucille McMullen, Florida State University, spoke on "This Business of Food."

New York State Dietetic Association. The officers for the coming year for the New York State Dietetic Association will be: President, Meredith Jones, New York City; Vice-President, Katharine Harris, Cornell University, Ithaca; Secretary, Rachel Mayhew, New York City; and Treasurer, Dorothy Kinnear, Presbyterian Hospital, New York City.

North Dakota Dietetic Association. On May 2 the fourth annual convention of the North Dakota Dietetic Association met in Minot.

Pennsylvania Dietetic Association. The sixteenth annual meeting of the Pennsylvania Dietetic Association was held in Reading on April 28 and 29. The first session took the form of a panel discussion on "Common Problems in Operating a Dietary Department in a Hospital," at which were presented the viewpoints of the administrator, the dietitian, and the purchasing agent. Margaret A. Taylor, Dietitian, Reading Hospital, represented dietetics.

A Pennsylvania Dutch luncheon was held on the first day of the meeting, after which Vera Bryant talked on "Pennsylvania Dutch Customs and Art." This was followed by a meeting at which Wayne M. High, Jr., an architect, and Marion D. Floyd, Director of Dietetics, Massachusetts General Hospital, Boston, spoke on "Tomorrow's Hospital Kitchen." Edward Vinnicombe, Jr., Manager, Institution Division, McCormick Company, Reading discussed another administrative problem, "Personnel Training in the Modern Way."

The program on community nutrition included an address by Dr. Winslow T. Tompkins, Pennsylvania Hospital, Philadelphia, on "Prenatal Dietary Studies," and a paper by Dr. Joseph T. Freeman, Woman's Medical College Hospital, on "Geriatrics."

On the second day, Dr. Pauline Beery Mack, Director, Ellen H. Richards Institute, The Pennsylvania State College, reported on recent nutrition studies of institutionalized children in Pennsylvania. At the general session, Gladys E. Hall, A.D.A. Executive Secretary, discussed the national Association's activities. In the afternoon, Dr. Phillip L. Rettew, Woman's Medical College, spoke on "Current Trends in High-Protein Diets."

At the business meeting, the following officers were elected for 1949–50: President, Evelyn A. Carpenter, Philadelphia Hospital for Contagious Disease; President-Elect, Esther A. Atkinson, Pennsylvania State College; Vice-President, Margaret C. Madden, Philadelphia Psychiatric Hospital; Secretary, Marjorie Sims, Drexel Institute of Technology; and Treasurer, Ruth E. Sylvester, Allegheny County General Hospital.

The Pennsylvania Association will soon publish jointly with the State Department of Health a chart on the "Sodium Content of Foods." Copies will be sent to state nurses associations and state medical societies in the U. S. and possessions, as well as the U. S. Children's Bureau and members of the Pennsylvania Dietetic Association. The chart was prepared by the Diet Therapy Section and members of the state health department.

West Virginia Dietetic Association. Marshall College, Huntington, was the scene of the eighth annual meeting of the West Virginia Dietetic Association on May 21. Grace Bulman, A.D.A. Vice-President, represented the national Association on the program. The speaker at the dinner was Mrs. E. S. Maclin, Cabell County Home Demonstration Agent; her subject was "One Tongue."

To tie in with this meeting, radio time was arranged over WSAZ, Huntington, on May 21. Margaret Joseph, St. Joseph's Hospital, Parkersburg, spoke on "A Career with a Choice."

West Virginia has selected as its "protege" the Department of Home Economics, West China Union University, and has already sent two cartons of books and pamphlets to Dr. Stella Cheng, Head of the department. This work is being carried out as part of the A.D.A. Professional Education Section project to help foreign libraries.

WHAT MAKES
Boontonware
BOUNCE
INSTEAD OF
BREAK
MOLDING KNOW-HOW
Durable Boontonware is made of the exciting new Melmac* compound. But the material in itself is not the complete answer. Expert design, weight and curing are vital to the durability of the finished product. These are the molder's problems.
As a custom molder for 27 years, the Boonton Molding Co. has molded plastics by most methods. Quality is a rule with them. Boontonware is no exception to this rule. Melmac* PLUS molding know-how makes Boontonware the best buy in heavy duty dinnerware.
* Reg. U.S. Pat. Off.
NATIONAL DISTRIBUTOR
PARKER D. PERRY INCORPORATED
729 Boylston Street
Boston 16, Mass.
See Boontonware at leading Restaurant, Hotel and Hospital Supply Houses everywhere or write to us direct for more information.
Boontonware
It lasts and lasts and lasts